MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE. Assistant Editor: FRANK OWEN STETSON.

VOL. XXXIII. AUGUST, 1905. No. 8

INTRODUCTION.

The MONTHLY WEATHER REVIEW for August, 1905, is based on data from about 3486 stations, classified as follows:

Weather Bureau stations, regular, telegraph, and mail, 176; West Indian Service, cable and mail, 4; River and Flood Service, regular 52, special river and rainfall, 363, special rainfall only, 98; cooperative observers, domestic and foreign, 2565; total Weather Bureau Service, 3258; Canadian Meteorological Service, by telegraph and mail, 33; Meteorological Service of the Azores, by cable, 2; Meteorological Office, London, by cable, 8; Mexican Telegraph Company, by cable, 3; Army Post Hospital reports, 18; United States Life-Saving Service, 9; Jamaica Weather Service, 130; Costa Rican Meteorological Service, 25. Total, 3486.

Since December, 1904, the Weather Bureau has received an average of about 1700 reports from as many observers and vessels, giving international simultaneous observations over the Atlantic and Pacific oceans at 12 noon, Greenwich time, or 7 a. m., seventy-fifth meridian time. These are charted, and, with the corresponding land observations, will form the framework for daily weather charts of the globe.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Capt. S.I. Kimball, General Superintendent of the United States Life-Saving Service; Capt. H. M. Hodges, U. S. N. (Retired), Hydrographer, United States Navy; Anastasio Aljaro, Director of the Physico-Geographic Institute, San José, Costa Rica; Commandant Francisco S. Chaves, Director of the Meteorological Service of the Azores, Ponta Delgada, St. Michaels, Azores; W. N. Shaw, Esq., Secretary, Meteorological Office, London; H. H. Cousins, Chemist, in charge of the Jamaica Weather Office; Señor Enrique A. Del Monte, Director of the the Meteorological Service of the Republic of Cuba; Rev. L. Gangoiti, Director of the Meteorological Observatory of Belen College, Havana, Cuba.

Attention is called to the fact that at regular Weather Bureau stations all data intended for the Central Office at Washington are recorded on seventy-fifth meridian or eastern standard time, except that hourly records of wind velocity and direction, temperature, and sunshine are entered on the respective local standards of time. As far as practicable, only the seventy-fifth meridian standard of time, which is exactly five hours behind Greenwich time, is used in the text of the REVIEW. The standards used by the public in the United States and Canada and by the cooperative observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is 157° 30′, or $10^h\ 30^m$ west of Greenwich. The Costa Rican standard meridian is that of San José, $5^h\ 36^m$ west of Greenwich.

Barometric pressures, whether "station pressures" or "sea-level pressures", are now reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

In conformity with Instructions No. 43, March 29, 1905, the designation "voluntary", as applied to the class of observers performing services under the direction of the Weather Bureau without a stated compensation in money, is discontinued, and the designation "cooperative", will be used instead in all official publications and correspondence.

Hereafter the titles of the respective forecast districts will be as used in the current REVIEW to accord with paragraph 236 of Station Regulations, dated June 15, 1905.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

From the 1st to 6th and 17th to 20th barometric disturbances of moderate strength advanced northeastward over the western British coasts, and during the third decade of the month an extensive, though shallow, depression covered the British Isles and moved thence eastward over continental Europe. In the vicinity of the Azores prevailing high barometer was interrupted only from the 12th to 14th. Several disturbances of slight intensity passed from the American Continent over Newfoundland, and during the last three days of the month pressures were low over New England and Nova Scotia. From the 17th to 19th the barometer was relatively low on the south Atlantic coast and over Florida. On the 27th and 28th low pressure prevailed from Florida over Bermuda, and during the night of the 27–28th a steamship foundered off the extreme north Atlantic coast of Florida and a number of vessels put into port in distress. Advices regarding the threatening character of the weather on the south Atlantic coast were telegraphed to all Florida ports at noon of the 27th.

No well defined storms of the hurricane type visited any of the islands of the West Indies. About the 20th, however, there was evidence of a storm to the southeast of the Windward Islands.

The barometric disturbances that visited the United States were of slight intensity and shipping on the seacoast and Great Lakes was not imperiled by general storms.

Attending the passage of the barometric depressions traced on Chart II, heavy local rains occurred at points along the middle and east Gulf coasts from the 1st to 5th, and in middle and northern districts at intervals during the month. During the evening of the 30th tornadic storms appeared in central New York and northeastern Pennsylvania. Reference is made in the report of the Denver Forecast District to a torrential rain near Trinidad, Colo., during the evening of the 24th. On the evening of the 27th a heavy wind and dust storm visited Oregon and Washington.

Although no prolonged periods of excessively high temperature were experienced in the middle and northern districts, high temperatures prevailed at intervals in the Great Plains region, and on the 24th maximum readings were above 100° in parts of Kansas. Frost-bearing cool waves visited some of the northern districts during the third decade of

the month, without, however, causing material damage to vegetation.

BOSTON FORECAST DISTRICT.

The month was cooler than usual with more than the average number of clear days, and during the closing week light and killing frosts occurred in some of the northern sections of New England. Local storms were less frequent than usual although several of great violence were reported. No heavy rain or windstorms visited the coast.—*J. W. Smith, District Forecaster.*

NEW ORLEANS FORECAST DISTRICT.

No important disturbances occurred along the Gulf coast. The weather was generally mild, and precipitation was deficient over portions of the district.—*I. M. Cline, District Forecaster.*

CHICAGO FORECAST DISTRICT.

The weather for the month was, as a whole, fine. Storm warnings were not ordered nor required for the upper Lakes. The barometric depressions that crossed the Western and Northwestern States were in several instances attended by thunderstorms and heavy local rains. There was no stagnation of barometric areas and no prolonged periods of heat. Injurious frost or frost temperatures were not produced by the cooler weather of the third decade of the month.—*E. B. Garriott, Professor and District Forecaster.*

DENVER FORECAST DISTRICT.

Over the greater part of the district the month was warm and drier than usual and no frost warnings were required. During the evening of August 24 a torrential rain fell in the foot hills, twelve miles northwest of Trinidad. The canyon soon carried deep torrents. In Road Canyon, a deep and very narrow gorge, in which Berwind and Tabasco are located, many houses and their occupants were carried away by the wall of water 30 feet high that swept down the canyon during the darkness and the storm. About 35 lives were lost, the failure of many to escape being accounted for by the steepness of the sides of the canyon. Railroad tracks were washed out and two railroad bridges near Ludlow were carried away. The Apishapa and the Purgatory rivers drain the region; these streams did not leave their banks.—*F. H. Brandenburg, District Forecast Official.*

SAN FRANCISCO FORECAST DISTRICT.

The month as a whole was without special features of interest and no frost, cold wave, or storm warnings were issued.—*A. G. McAdie, Professor and District Forecaster.*

PORTLAND FORECAST DISTRICT.

The month was unusually dry and east of the Cascade Mountains it was warmer than usual. During the 27th a shallow low pressure area, central over western Idaho, rapidly deepened, and, at the same time, a high pressure area moved inland from off the Oregon and northern California coasts. These conditions produced a severe dust storm from 4 to 8 p. m. The storm was first noticed in northeastern Oregon, and afterwards in eastern Washington as far north as Spokane. The wind velocities were not sufficiently high to be destructive, but being attended by clouds of dust, they caused great annoyance and excited considerable attention. Warnings for light frost were issued on the morning of the 31st and were partially verified. No storm warnings were ordered.—*Edward A. Beals, District Forecaster.*

RIVERS AND FLOODS.

The rivers of the Mississippi system maintained good average stages during the month, the quantity and equitable distribution of the rainfall preventing the steady decline that usually sets in about this time of the year. The flood that began on July 29 in the White and Black rivers of Arkansas was neither prolonged nor distructive, although danger-line stages were general, except along the extreme northern portion of the White River. Along the rivers of the Atlantic system the month was comparatively uneventful, except in southeastern Pennsylvania, where the heavy local storms of the 24th and 25th caused a flood in the smaller streams that has not been equaled since the great floods of May 31–June 1, 1889. It was particularly severe at and in the vicinity of the city of York. Codorus Creek overflowed its banks in many places, necessitating the suspension of business, including railroad traffic, and causing a great amount of damage. There were also moderate floods from the 11th to the 16th in the northern and eastern portions of South Carolina, due to the heavy rains of the 8th, 9th, and 10th. The Wateree and Pedee rivers and their tributaries were generally above the danger lines, and some damage was done to growing crops. Warnings for these floods were issued at the proper time.

The highest and lowest water, mean stage, and monthly range at 275 river stations are given in Table VI. Hydrographs for typical points on seven principal rivers are shown on Chart V. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.—*H. C. Frankenfield, Professor of Meteorology.*

CLIMATE AND CROP SERVICE.

By Mr. JAMES BERRY, Chief of Climate and Crop Divison.

The following summaries relating to the general weather and crop conditions during August are furnished by the directors of the respective sections of the Climate and Crop Service of the Weather Bureau; they are based upon reports from cooperative observers and crop correspondents, of whom there are about 3300 and 14,000, respectively:

Alabama.—Temperature about normal; average rainfall for the State excessive, but deficient in northeastern, some central, and southeastern counties. Cotton deteriorated steadily, except that it continued fairly satisfactory in some northern and central counties; rust, shedding, and boll rot became general, causing much damage; some early cotton ceased blooming by the 20th; bolls opened slowly; picking general by the 24th. Corn and other food crops made generally satisfactory progress; some early corn gathered. Much fodder and hay damaged by rain.—*F. P. Chaffee.*

Arizona.—There was more than the usual amount of cloudiness; thunderstorms were frequent; the rainfall, although slightly deficient, was quite evenly distributed, and the temperature was above the normal. Harvesting of grain progressed slowly in the northern section. Crops made good growth. Fall garden truck was planted extensively. Late corn was in tassel at the end of the month. Potatoes came up to good stands. Local winds and hail injured gardens slightly. Fifth cutting of alfalfa began on the 26th. Stock thrifty. Water supply abundant for all purposes.—*L. N. Jesunofsky.*

Arkansas.—Weather favorable for farm work and growing crops. Cotton improved, fruited fairly well, and began opening by close of month; it was injured locally by rust, shedding, and insects. Early corn good, matured nicely; the late improved and ranged from poor to good. Thrashing practically completed; wheat poor yield, oats good, quality of both excellent. Sweet and Irish potatoes, field peas, and turnips did well. Considerable hay saved in good condition. Apples poor crop of inferior quality.—*O. C. Burrows.*

California.—Although the mean temperature for the month was slightly below normal, exceedingly hot weather prevailed on the 7th and 8th in the central and northern sections and records of maximum temperatures in southern California were broken on the 28th and 29th. Grapes and beans were somewhat damaged by the heat, which in other respects was beneficial. Grape picking and raisin making commenced toward the close of the month.—*Alexander G. McAdie.*

Colorado.—The weather conditions were generally favorable. Harvesting, haying, and thrashing progressed very satisfactorily. The yield of winter wheat was very good and the quality fine, but reports as to spring wheat were not so favorable. The yield of barley, rye, and oats was generally good, as was also the quality. Corn and sugar beets were very promising, and the condition of potatoes generally good. Ranges afforded adequate feed, but the need of rain was felt at close of month.—*P. McDonough.*

Florida.—The temperature averaged 0.6° above the normal and the precipitation 3.72 inches in excess of the average. Unfavorable weather continued during the greater part of the month. Too much rain damaged cotton seriously, reducing the probable yield to about one-half of an average crop. Citrus trees were vigorous, with but few complaints of the loss of fruit. Cane was very good, except on lowlands, which were too wet. Field peas, cassava, and pineapples advanced nicely. The bulk of the corn crop was housed.—*A. J. Mitchell.*

Georgia.—Temperature and rainfall somewhat below normal, rainfall well distributed generally. Cotton deteriorated, damaged by drought first decade and by rains later; serious injury by black root, rust, and shedding; no top crop developed; picking began south about 5th and became general by 25th, all gathered in scattered fields south at end of month; small yield indicated. Large crop of hay and fodder saved, quality excellent. Weather favorable to minor crops, which were unusually good. Fall plowing was begun.—*J. B. Marbury.*

Hawaii.—Entire month warm, although slightly cooler during the last week. Well distributed and abundant rainfall, except in portions of the north Kohala and Kau districts of Hawaii and leeward portions of other islands. Growing cane made rapid progress, although weeds were troublesome in windward plantations and high winds caused some slight damage. A few mills still grinding 1905 cane; planting for 1907 crop general. Summer pineapple season drawing to a close; winter crop showing up nicely. Coffee in good condition in all sections, but ripening of berries retarded in Kona, Hawaii, by continued cloudy and showery weather. Second crop of rice doing nicely. Pastures, on the whole, improved considerably during month.—*Alexander McC. Ashley.*

Idaho.—Excessively warm first week, causing rapid ripening and some shrinking of wheat; later the temperature was somewhat variable, though averaging above normal; some frost occurred in northern counties on the 31st. Water for late hay crop was scarce in many places; ranges became very dry, and some stock was fed. Though heat and drought affected fruit adversely, the crop promised generally to meet expectations. A large crop of beets was maturing well.—*Edward L. Wells.*

Illinois.—The temperature conditions were favorable for crop development throughout the month. There was a dearth of moisture in some localities, but precipitation was generally ample. Corn maintained an excellent condition during the month, giving promise of a heavy yield. At the end of the month thrashing was nearing completion, with generally compensating results; broom corn of good quality was being harvested. The potato outlook was not altogether promising, and apples were mostly disappointing.—*Wm. G. Burns.*

Indiana.—Generally weather conditions were favorable to farming interests. Wheat and oats were mostly thrashed; the wheat yield was unusually good and that of oats about average. Corn developed rapidly and promised an excellent crop. The early potato crop was light. Clover seed was yielding a light crop. Tobacco was being cut, crop good. Apple crop light, peaches and pears fair. Fall plowing in progress, ground in good condition.—*W. T. Blythe.*

Iowa.—August was above normal in temperature, and 3.7° warmer than July. This was highly favorable to the corn crop, which made good progress during the month, being within 20 to 30 days of full maturity on September 1. The rainfall was also a little in excess, which kept pastures green and promoted a heavy growth of aftermath in clover and timothy meadows. Thrashing was considerably delayed and grain in shock was somewhat injured by frequent showers. As a whole, the month was favorable.—*John R. Sage.*

Kansas.—Early corn matured during the month and cutting began the last week. Late corn had grown well, but needed rain. Thrashing continued; wheat and oats yielded better than at first. Third crop of alfalfa cut in northern counties and fourth crop in southern. Prairie haying progressed during the month, and a good crop was put up. Plowing for fall seeding continued. Apples fell badly the last week. Potatoes did fairly well.—*T. B. Jennings.*

Kentucky.—Temperature slightly below normal. First and middle of month showery; heavy showers on the 23d; latter part of month dry. Corn mostly matured, with heavy crop; late doing well. Tobacco ripening and a portion cut; some reports of firing and house burning. Peas, millet, and sorghum made good yields. Hemp good. Peaches made poor crop; apples continued falling and rotting, with poor prospects for winter varieties. Pastures green and stock in fine condition.—*Geo. B. Wurtz.*

Louisiana.—Weather conditions during August did not materially interfere with the cultivation of crops, but occasional showers in many localities made it impossible to kill grass and weeds, which grew and spread rapidly. Cotton, as a whole, improved very little, if any, during the month. Picking commenced during the last decade. Sugar cane was promising. Rice harvest and thrashing were interfered with by occasional showers. Corn was maturing a poor yield. Truck gardens made satisfactory growth.—*I. M. Cline.*

Maryland and Delaware.—Moderate temperatures prevailed, with the precipitation in excess of normal. Wheat yields fair and quality good, though some was damp. Corn a large crop and fodder heavy. Buckwheat did well and was nearly ready to cut. Pastures remained green. Oats were a good crop. Fall work progressed nicely. Apples improved and a good crop was indicated. Pears were abundant, but peaches scarce. Grapes, good indications. Tobacco cutting was pushed, with a light crop. Tomatoes were scarce, but canning corn plentiful. Potatoes, garden truck, and melons in abundance.—*C. F. von Herrmann.*

Michigan.—Weather conditions during August were generally very favorable to corn, beans, sugar beets, buckwheat, and garden truck, but it was too wet for potatoes, which were injured by blight. Oat harvest was completed under favorable conditions. Plowing for fall seeding was quite generally begun during the latter part of the month. The apple prospect continued poor, but peach and plum yields were abundant.—*C. F. Schneider.*

Minnesota.—Much warm weather before the 15th. Rainy on many days of the month. Spring wheat and oat harvest continued all the month, advancing steadily northward. Flooded northern lowlands delayed harvest seriously. Barley cutting finished by the 15th. Good flax crop being cut all the month. Stacking and shock thrashing in progress whenever grain was dry. Corn grew well all the month. Potato crop uneven, with considerable rot. Wild hay was secured where possible. Seed timothy good in southeast.—*T. S. Outram.*

Mississippi.—Over much of the State there was too much rain for cotton, which was considerably injured by rust and shedding, and in some localities blight and boll worms were damaging; much of the crop was undersized and plants that were large did not fruit well; bolls opened rapidly toward the close of the month and picking was commenced south. Fodder pulling and haying, although interrupted by rains, progressed fairly well. Young corn promising. Peas, potatoes, and sugar cane did well. Turnips and fall gardens were planted.—*W. S. Belden.*

Missouri.—The weather was generally favorable. Thrashing was practically completed, with good yields of wheat, rye, and oats. Corn made good and steady growth. The advanced crop was fully matured, and cutting began during the last decade. The outlook was highly promising for one of the largest yields ever produced. Cotton suffered somewhat from excessive moisture and was in poor condition on lowlands; upland cotton was in fair condition. A fair crop of hay was saved. Apples were very scarce. Potatoes were giving fair returns.—*George Reeder.*

Montana.—The month was warm, except during the week beginning the 15th; light frosts injured tender plants in some mountain localities on the 16th. Rainfall deficient over much the greater portion of the State Winter wheat harvest commenced early in the month; oats and spring wheat ripened rapidly the latter half; grain harvest, except oats, nearly completed. Thrashing in progress the last two weeks. Second crop of alfalfa was mostly harvested and a fair yield reported. Range grass cured in most sections. Cattle and sheep maintained a good condition. Stock water scarce in places. Potatoes and apples promised good crops.—*R. F. Young.*

Nebraska.—August was a warm, wet month. Corn made an excellent growth and gave promise of a large crop at the end of the month. Harvesting was finished in northern counties by the 15th. Thrashing and haying progressed nicely. Prairie hay was an excellent crop and an unusually large amount was secured in good condition. The soil was generally moist enough to work well and plowing progressed rapidly and was mostly finished by the end of the month.—*G. A. Loveland.*

Nevada.—The month was warm and dry. Water for irrigation and stock was scarce. The first crop of alfalfa was good, the second very light. The yield of grain was satisfactory. Vegetables did well in irrigated sections, but poorly elsewhere. The potato crop was fair. Fruit was poor, except apples, which promised a fair crop. Stock was in good condition, but range feed was not satisfactory at the close of the month.—*H. F. Alps.*

New England.—The weather of the month was very pleasant, with more than the usual number of clear days, much of the rain falling during the nights. Rainfall was deficient in northern sections, with a drought in parts of Maine, and was normal or excessive elsewhere. Light to killing frosts occurred in northern sections, without great damage. Weather generally favorable to crops and to harvesting and housing, except in sections where droughty conditions prevailed.—*J. W. Smith.*

New Jersey.—At the close of the month all late truck crops were in good growing and maturing condition; fall plowing was well advanced and some wheat and rye seeded; pasturage was very much improved by the frequent rains; late potatoes and field tomatoes promised to be below the average; apples, peaches, and pears, except Kieffer, did not promise well; cranberries maturing, the yield promising to be less than last year.—*Edward W. McGann.*

New Mexico.—Precipitation averaged considerably below the normal and most of it came early, so that rain was needed toward close. The early rains revived crops and renewed water supply, carrying fields well into month or to maturity. Harvesting and thrashing of wheat, oats, and barley continued slowly in higher northern districts. Considerable native hay was secured, also second crop alfalfa in north and third crop in south. Corn matured rapidly toward close and cutting began. Range grasses generally cured, but stock continued in prime condition.—*Charles E. Linney.*

New York.—The month was moderately cool, with about normal precipitation, which was fairly well distributed and was favorable for crop growth. Much wheat, rye, and oats were thrashed, with good yields. Corn and buckwheat made good growth. Beans suffered from rust and

SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS, AUGUST, 1905.

In the following table are given, for the various sections of the Climate and Crop Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting greatest and least monthly precipitation, and other data, as indicated by the several headings.

The mean temperatures for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation. Of course the number of such records is smaller than the total number of stations.

Section.	Temperature—in degrees Fahrenheit.							Precipitation—in inches and hundredths.					
	Section average.	Departure from the normal.	Monthly extremes.					Section average.	Departure from the normal.	Greatest monthly.		Least monthly.	
			Station.	Highest.	Date.	Station.	Lowest.	Date.			Station.	Amount.	Station.	Amount.
Alabama	79.2	− 0.4	Gadsden	102	6	Oneonta	54	28	5.30	+1.24	Spring Hill	12.14	Letohatchie	0.68
Arizona	82.8	+ 0.6	Parker	126	6	Fort Defiance	42	11, 12	2.05	−0.45	Huachuca Reservoir	5.37	3 stations	0.00
Arkansas	79.1	0.0	Howe	103	25	Huntsville	51	28	3.73	+0.60	Fayetteville (No. 2)	7.25	Howe	0.60
California	73.4	− 0.5	Volcano Springs	119	8	Bodie	21	1	0.03	−0.02	Greenville	0.96	Many stations	0.00
Colorado	66.0	+ 0.8	Blaine	108	24	Wagon Wheel Gap	26	5	1.33	−0.33	Victor	5.11	Saguache	0.15
Florida	80.9	− 0.6	Molino	102	24	Molino	59	28	11.24	+3.72	Sumner	24.76	Key West	3.14
Georgia	78.6	− 0.5	Hawkinsville	106	6	Diamond	52	29	4.96	−1.08	Diamond	13.00	Valdosta	0.68
Hawaii	†75.5	.....	Pahala, Hawaii	96	8	Humuula, Hawaii	40	5	‡8.35	.....	Honomanu, Maui	37.76	Kihei, Maui	0.07
Idaho	68.2	.....	Glenns Ferry	112	7	Landore	25	16	0.34	.....	Lemhi Agency	1.52	4 stations	0.00
Illinois	75.1	+ 1.3	3 stations	99	3 dates	Lanark	47	26	3.48	+0.49	Lanark	7.90	Mattoon	1.16
Indiana	74.1	+ 0.8	Rome	101	6	Logansport	46	17	5.05	+1.75	Princeton	12.85	Winamac	2.12
Iowa	74.3	+ 2.3	Waukee	104	11	Rock Rapids	44	6	4.05	+0.48	Plover	8.47	Vinton	1.05
Kansas	78.7	− 1.8	Achilles	112	31	Achilles	47	28	1.88	−1.28	Pleasanton	6.74	Saline	0.04
Kentucky	75.7	− 0.5	Paducah	99	6	Greensburg	42	22	3.82	+0.36	Catlettsburg	7.46	Bowling Green	1.19
Louisiana	82.6	+ 1.2	Alexandria	104	25	Robeline	60	29	4.92	−0.22	Venice	13.56	Robeline	1.30
Maryland and Delaware	72.9	− 0.8	Boettcherville, Md	104	23	Deer Park, Md	38	28	5.30	+1.45	Millsboro, Del	12.33	Deer Park, Md	1.85
Michigan	67.9	+ 1.6	Allegan	96	23	Humboldt	27	1	2.68	+0.34	Coldwater	8.03	Baraga	0.75
Minnesota	68.9	+ 1.8	4 stations	99	10	Mount Iron	36	1	4.36	+0.57	Stillwater	8.82	Morris	1.46
Mississippi	80.7	+ 0.6	Water Valley	103	24	Ripley	54	23	5.52	+0.93	Pecan	11.81	Natchez	0.88
Missouri	76.4	+ 0.6	§Princeton	99	12§	Louisiana	48	26	4.69	+1.09	Neosho	9.32	Steffenville	1.35
			§Windsor	99	24§									
Montana	67.8	+ 2.5	Billings	104	24	Wolsey	24	16	0.65	−0.37	Dillon	2.77	4 stations	0.00
Nebraska	74.2	+ 1.4	§Lynch	104	10§	Agate	39	19	2.79	+0.15	Palmyra	8.85	Seneca	0.04
			§Purdum	104	31§									
Nevada	70.7	+ 0.9	2 stations	106	8	Quinn River Ranch	31	29	0.27	−0.21	Wood	1.39	6 stations	0.00
New England*	65.4	− 2.4	3 stations	92	3 dates	Patten, Me	32	29	3.63	−0.38	Norwalk, Conn	7.37	Patten, Me	0.06
New Jersey	71.1	− 1.4	3 stations	95	3 dates	Charlotteburg	38	19	5.72	−1.24	Tuckerton	9.88	Toms River	3.51
New Mexico	72.6	+ 1.4	§Carlsbad	104	16§	Elizabethtown	34	14	1.43	−0.93	Magdalena	4.05	Roswell	0.01
			§San Marcial	104	28, 29§									
New York	65.3	− 0.6	Coeymans, Lyons	94	10	Paul Smiths	31	26	4.29	+0.02	Mount Hope	7.98	Ticonderoga	1.32
North Carolina	74.8	− 1.3	§Lumberton	101	7	Linnville	37	29	6.48	+0.65	Horse Cove	14.36	Hatteras	1.65
			§Pinehurst, Selma											
North Dakota	67.5	+ 2.0	Dickinson	107	27	McKinney	34	30	2.62	+1.18	Fargo	6.82	Williston	0.74
Ohio	71.7	+ 0.2	§Lima	96	13§	§Colebrook	41	3	4.46	+1.56	Jacksonburg	10.97	Tiffin	1.61
			§Thurman	96	5§	§Greenhill								
Oklahoma and Indian Territories.	80.8	− 0.1	Chickasha, Ind. T	110	16	Kenton, Okla	51	10	3.38	+0.85	Stillwater, Okla	8.15	Ravia, Ind. T	0.65
Oregon	66.1	+ 0.7	Beulah	111	7	Beulah	24	31	0.18	−0.32	Nehalem	1.92	31 stations	0.00
Pennsylvania	69.6	− 0.4	Hamburg	95	6	Coudersport	36	28	5.71	+1.49	Seisholtzville	10.83	Elwood Junction	1.92
Porto Rico	79.7	.....	§Manati	98	3 d't's§	Adjuntas	53	8	8.78	.....	Las Cruces	21.19	Santa Isabel	1.93
			§Central Aguirre	98	11§									
South Carolina	77.9	− 1.5	Aiken	107	7	Aiken	46	26	5.69	−0.54	Santuc	10.87	Beaufort	2.30
South Dakota	72.3	+ 2.1	Ashcroft	108	28	Kidder	41	25	2.76	+0.10	La Delle	8.22	Grand River School	0.36
Tennessee	76.5	+ 0.6	§Hamilton Springs	99	6	§Erasmus	45	29	4.99	+0.93	Andersonville	12.05	Brownsville	1.79
			§Lewisburg, Liberty§			§Silver Lake§								
Texas	83.6	+ 1.2	§Eagle Pass	109	1§	Texline	50	3 dates	1.20	−1.41	Rhineland	4.00	3 stations	0.00
			§Fort McIntosh	109	3§									
Utah	71.4	+ 0.2	§Rockville	110	6§	Woodruff	26	31	0.74	−0.04	Ibapah	2.22	La Sal	T.
			§St. George	110	7§									
Virginia	73.0	− 1.5	§Arvonia	97	7, 23§	Burkes Garden	41	27, 29	5.03	+1.03	Fredericksburg	8.43	Farmville	2.15
			§Dinwiddie	97	7§									
Washington	65.5	− 0.8	Mottingers Ranch	110	6	Wilbur	29	31	0.59	−0.10	Clearwater	3.07	7 stations	0.00
West Virginia	71.3	− 1.1	§Moorefield	96	29§	Bayard	40	28	4.25	+0.63	Huntington	8.32	Leonard	1.32
			§New Martinsville	96	24§									
Wisconsin	68.6	+ 1.1	§Darlington	99	5§	Grand Rapids	32	25	4.87	+1.96	Barron	8.50	Florence	2.04
			§Prairie du Chien	99	11§									
Wyoming	63.9	+ 0.4	Basin	102	25	Riverside, Y. N. P	27	18	0.98	+0.08	Moorcroft	3.10	3 stations	T.

* Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut. † 47 stations, with an average elevation of 597 feet. ‡ 130 stations.

blight. Hops matured quite rapidly. A fine crop of tobacco was being secured in good condition. Potatoes were struck by blight and deteriorated considerably. Apples continued to drop; pears and plums remained fairly good, and peaches and grapes promised good.—*W. C. Devereaux.*

North Carolina.—During the first part of the month rains were heavy and crops on lowlands were washed and damaged considerably; land became too wet to cultivate and crops became weedy; later the conditions improved. The temperature for the month was about normal. Cotton commenced to open about the middle of the month, but, it was said, prematurely. Much lowland corn was destroyed by excessive moisture, but upland corn fared better. Most of the tobacco was cut and cured; the yield was fair, but the leaf was light. Minor crops were doing well. Fruit, except grapes, generally very poor.—*A. H. Thiessen.*

North Dakota.—The weather was not entirely favorable for farm work during the month, harvesting being often interrupted and delayed by frequent rains, which were so heavy in the eastern portions that some low land was flooded and made so soft and wet that machines could not get in the fields. The fore part of the month was generally cool, but the latter part quite warm, forcing grain crops to mature rapidly.—*B. H. Bronson.*

Ohio.—At the end of the month fall plowing had become general and wheat and oat thrashing was nearly completed. Corn had made rapid progress and was in good condition, with prospects that the bulk of the crop would be safe from frost by September 20 to 25. Tobacco cutting was in progress; crop in good condition. Pastures good. Potato digging in progress; some reports of blight and rot in central and northeastern counties. Outlook for fruits poor.—*J. Warren Smith.*

Oklahoma and Indian Territories.—Average temperature and precipitation were beneficial, generally, to all crops. Fall wheat plowing nearing completion, with ground in good condition. Early corn giving fair to good yields; late eared out and doing well. Cotton improved, fruiting and bolling well, and in poor to fair condition, wtth some picked. Minor crops being harvested, with good yields. Hay nearly harvested, with good yields. Fruit a poor to fair yield.—*C. M. Strong.*

Oregon.—The harvesting and the thrashing of the grain crop, which continued throughout August, were practically completed by the middle of the third decade. Fall wheat and barley gave average yields, but spring wheat and oats were disappointing. Corn and hops made good advancement. Late potatoes and gardens generally made poor growth because of the dryness of the month. Peaches and apples proved below

the average in quantity. Pears yielded abundantly.—*Edward A. Beals.*

Pennsylvania.—The prevailing conditions were generally favorable for farm work and the advance of growing crops. At the close of the month tobacco was in an unusually promising condition and a large portion of Havana had been housed; thrashing was well under way and yields satisfactory; corn was large in stalk and well eared; buckwheat was filling well; garden truck and pastures were good and plentiful; potatoes were suffering from rot and blight; apples were wormy and dropping, and peaches were fair in many localities.—*T. F. Townsend.*

Porto Rico.—The rainfall for the month was much in excess of the normal. The drought, which prevailed at many places during the first part of the month, was broken by the heavy showers of the 9th. Cane did finely, except in the unirrigated fields of the southern section, where more rain was needed. Coffee prospects were excellent. Much land being prepared for tobacco, with indications that the tobacco acreage will be greatly increased over that of last season. The cotton yield was light, the plant having been badly damaged by worms in many places. Small crops and fruits were generally abundant.—*A. L. Brockway.*

South Carolina.—Temperatures had an unusually wide range, but were generally favorable. Precipitation was generally about normal. Cotton deteriorated on sandy lands, due to rust that caused excessive shedding, while on heavy soils and on the sea islands there was slight improvement. Opening began with the month and picking became active after the 20th. Early corn reached maturity and later plantings improved steadily. Late tobacco was better than the early crop. Rice harvest began. Minor crops did well.—*J. W. Bauer.*

South Dakota.—Favorable temperature. Wind and rain lodged late wheat and oats in some northeastern counties, somewhat retarded harvest, and injured some grain in shock. Scattered fields of wheat were slightly injured by black rust. Cutting of small grains was completed; thrashing from shock indicated mostly good yields, but there was considerable smutty wheat and discolored barley. Corn, grass, flax, potatoes, and millet did well. Corn was in promising condition and well eared. Flax and millet harvest was begun. Haying advanced favorably, with generous yields.—*S. W. Glenn.*

Tennessee.—Except in a few localities, the rainfall was ample, and temperature conditions were generally favorable. At the end of the month early corn was maturing well and the yield was good. Late corn was much improved and promised a fair crop. A fine crop of tobacco was being cut. Cotton was opening; generally rank in stalk growth, but not well bolled. Peanuts, turnips, and potatoes were good. Apples were poor. Hay crops were good.—*H. C. Bate.*

Texas.—Temperatures were generally above normal. Rainfall was in the form of showers, and was generally deficient, especially during the latter part of the month. Soil too dry and hard for plowing. Crops deteriorated decidedly, especially during the latter part of the month. Cotton improved early in the month, but later deteriorated decidedly; growth of plant and putting on squares were checked and bolls opened prematurely; in the northeast there was some improvement throughout the month; bolls opened rapidly in central and southern counties and picking was pushed; boll weevils diminished, but were still doing considerable damage. Rice and sugar cane generally did well, but suffered somewhat from dry weather.—*M. E. Blystone.*

Utah.—Thunderstorms were numerous, but the accompanying precipitation was insufficient for vegetation in some localities. Grain harvesting was nearing completion and thrashing was general; average yields were mostly reported. Beets were maturing and nearly ready to gather; the crop was generally in good condition, though suffering in localities from insects and blight. Lucerne was mostly gathered. Corn was in good condition. Ranges were dry, but stock was in good condition. The supply of water was low in some sections, and in consequence the work of irrigation was greatly impeded.—*R. J. Hyatt.*

Virginia.—The weather of the month was, on the whole, favorable for general crop progress. The temperatures prevailing, though lower than normal, were not enough so to be unseasonable. Precipitation was frequent during the first half of the month. Corn and tobacco did very well, cutting of the former and cutting, housing, and curing of the latter being well advanced by the 20th. Pastures were in good condition throughout the month. A great deal of fall plowing and other preparation for seeding was completed. There was no important improvement in the outlook for the apple crop.—*Edward A. Evans.*

Washington.—The month was dry in eastern counties and favorable for harvesting oats, barley, and an immense crop of wheat, although heavy winds in the central and southeastern counties considerably damaged the latter. The oat crop in western counties was somewhat injured by heavy rains. The month was too dry for pastures and potatoes.—*G. N. Salisbury.*

West Virginia.—The weather was generally favorable for farm work, and frequent showers were beneficial for crop growth. Harvesting was about completed during the first two weeks. Thrashing and fall plowing were in progress, with good yield of wheat and large yield of oats. Pastures and stock were in fine condition. Corn made good growth, and was very promising. Millet, buckwheat, cowpeas, sweet potatoes, and tobacco were doing well. Irish potatoes were deteriorating somewhat. The prospects for apples and other fruits were poor.—*E. C. Vose.*

Wisconsin.—Weather during the month marked by frequent rains, heavy at points, retarding thrashing and harvesting and causing some damage to grain. Much damage was done during the early part of the month by high winds, which lodged standing grain badly. Corn improved steadily, and, except on lowlands, was in excellent condition at the end of the month. Small grains furnished satisfactory yields, as a rule. Potatoes and apples very poor. Tobacco and buckwheat excellent. Pastures very satisfactory.—*J. W. Schaeffer.*

Wyoming.—The weather of the month was favorable for the completion of haying, except that in some sections the work was delayed by too frequent showers. A good crop of hay was secured, but more hay than usual was damaged by rains. A good grain crop matured and was harvested during the month. The absence of frost made the month favorable for gardens, which gave good yields. The water supply of the State was ample for needs of nearly every section.—*W. S. Palmer.*

SPECIAL ARTICLES.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. F. TALMAN, Acting Librarian.

The following titles have been selected from among the books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be loaned for a limited time to officials and employees who make application for them.

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Electricity and matter. (Yale University. Mrs. Hepsa Ely Silliman memorial lectures.) 162 pp. 8°. New York. 1905.

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A bibliography of geodesy. By James Howard Gore. Appendix No. 8, Report for 1902. 2d edition. Pp. 430–789. 4°. Washington. 1903.

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C. F. TALMAN, Acting Librarian.

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Bulletin of the American Geographical Society. New York. Vol. 37.

Ward, R. DeC. The conventions of Weather Bureau officials. [Note.] Pp. 555–556.

Ward, R. DeC. The variation of rainfall in the arid region of the United States. [Review of paper by William B. Stockman.] Pp. 556–557.

Ward, R. DeC. Meteorological instruction in the United States. [Note.] Pp. 558–559.

Knowledge. London. New Series. Vol. 2.

—— Rainfall. P. 221–223.

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Moore, Willis L. Predicting the weather. Pp. 718–722.

Nature. London. Vol. 72.

Cooke, W. Ernest. Islands for weather forecasting purposes. Pp. 343–344.

—— Some aspects of modern weather forecasting. Pp. 354–355.

—— The South African meeting of the British Association. Pp. 403–405.

—— A proposed new method for determining the solar radiation. P. 437.

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Cordeiro, C. J. B. The atmosphere [Depth of]. Pp. 384–386.

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Foster, Paul P. The solar observatory on Mount Wilson. Pp. 189–193.

—— The politics of the thermometer. [Abstract of paper by Alleyne Ireland.] Pp. 363–364.

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Bauer, L. A. Proposed magnetic and allied observations during the total solar eclipse, August 30, 1905. Pp. 216–217.

Ward, R. DeC. Exposure and crops in Switzerland. [Note.] P. 251.

Ward, R. DeC. Hurricanes, cocoa trees, and exports of Guam. [Note on work by W. E. Safford.] P. 251.

Ward, R. DeC. Climatic changes in central Africa. [Note.] P. 251.

Ward, R. DeC. Foehn winds in the Antarctic. [Note.] P. 284.

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Allan, G. E. Viscosity of air. [Abstract of article by J. L. Hogg.] P. 434.

B[orns], H. Inertia coefficients of aspiration thermometers in atmospheres of varying densities. [Abstract of article by J. Maurer.] P. 437.

B[orns], H. Variations in pressure in northeast Africa and the Nile flood. [Abstract of article by H. G. Lyons.] Pp. 437–438.

B[orns], H. Boring of the Simplon Tunnel and temperature distribution in it. [Abstract of article by F. Fox.] P. 438.

B[orns], H. Diurnal variation in electric dissipation and atmospheric dust on the Patscherkofel. [Abstract of article by H. v. Ficker and A. Defant.] P. 467.

B[orns], H. Electricity dissipation at Kremsmünster (1903 and 1904). [Abstract of article by P. B. Zölss.] Pp. 467–468.

B[orns], H. Dissipation of atmospheric electricity in relation to meteorology at Trieste. [Abstract of article by E. Mazelle.] P. 468.

B[orns], H. Atmospheric electricity in relation to meteorology on the Sonnblick. [Abstract of article by V. Conrad.] Pp. 468–469.

B[orns], H. Continuous observations of the rate of dissipation of electric charges in the open air. [Abstract of article by C. C. Farr.] P. 469.

Scientific American. New York. Vol. 93.

Zahm, A. F. Atmospheric friction as an obstacle in locomotion. Pp. 70–71.

—— Bombs for hail in Switzerland. Pp. 134–135.

—— Vagaries of the Gulf Stream. P. 165.

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Solar and terrestrial changes. P. 24,826.

—— Radioactive matter in the atmosphere. [Note on article by A. S. Eve.] P. 24,853.

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Curtis, R. H. On the amount of heat required for the growth and ripening of wheat. Pp. 113–116.

Bonacina, L. C. W. The study of thunderstorms. Pp. 118–119.

Markham, Christopher A. Lightning conductors. P. 121.

—— London fogs. Report of the Meteorological Council upon an inquiry during the winters of 1901–2 and 1902–3. [Review.] P. 122.

—— Rainfall in the Talla Valley. [Note on work by B. Hall Blyth and W. A. Tait.] P. 126.

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Durand-Gréville, E. Quelques progrès possibles en météorologie. Pp. 169–174.

Angot, Alfred. Contribution a l'étude de la variation diurne de la temperature. Pp. 174–176.

Maillet, E. Note sur l'étude de M. Delemer relative aux crues de l'Ardèche. P. 181.

Pernter, J. Sur un halo extraordinaire. Pp. 182–183.

Goutereau, Ch. Sur la durée de la pluie au Japon. Pp. 183–184.

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Gheury, E. J. Sur les influences metéorologiques de la lune. Pp. 208–212.

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—— La dissipation électrique du brouillard. [Note on work by Sir Oliver Lodge.] P. 272.

P., W. Fleurs de la glace. [Review of work by H. Schoentjes.] Pp. 302–303.

—— Relation entre les mouvements des glaces autour de Terre-Neuve et dans l'océan Arctique d'Europe. [Note.] Pp. 303–304.

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Rudaux, Lucien. Les lueurs crépusculaires. Pp. 157–158.

Quénisset, F. La photographie des météores [i. e., meteorological phenomena]. Pp. 193–195.

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Bracke, A. Le dessin des nuages. Pp. 141–147.

—— A propos de l'eclipse du 30 août 1905. Pp. 148–148.

—— Dictons du mois d'août. P. 150.

—— Station météorologique Antarctique. Pp. 151–154.

V., V. D. Orages et variation de la pression barométrique. Pp. 155–159.

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—— Die totale Sonnenfinsternis am. 30. August. Pp. 520–525.

—— Der Zusammenhang meteorologischer Erscheinungen mit Sonnenfleckperioden. Pp. 525–533.

—— Eine neue Methode zur Fixierung der Aufzeichnungen von Meteorographen für Registrierballons und eine neue automatische Abstellvorrichtung der Schreibfedern nach der Landung. [Abstract of article by R. Nimführ.] Pp. 569–571.

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Haecker, —. Untersuchungen über Nebeltransparenz. Pp. 343–353.

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Oddone, Emilio. Purpurwolken am Mittag. P. 359.

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Reimann, —. Ein vom Wind bewegter Blitz. Pp. 360–361.

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Bemmelen, W. van. Staubnebel im Malayischen Archipel im Jahre 1902.

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H[ann], J[ulius]. Resultate der meteorologischen Beobachtungen zu Punta Arenas in der Magellansstrasse 1888–1902. Pp. 367–369.

—— Fr. Braun über das Klima von Konstantinopel. Pp. 369–371.

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Exner, Felix M. Föhn in den Pyrenäen. P. 372.

—— Monats und Jahresmittel des Luftdruckes und der Temperatur zu Curityba, Paraná, 1884–1904. P. 372–373.

—— Eissturm in Philadelphia. Pp. 373–374.

Siegel, Franz. Regenfall auf den Stationen der Serrabahn Curitiba-Paranagua im Jahre 1904. P. 374.

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—— Einige Resultate langjähriger Beobachtungen zu Davos. P. 380.

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—— Resultate der meteorologischen Beobachtungen zu Paramaribo im Jahre 1903. P. 383.

Topolanski, V. Der tägliche Gang des Barometers auf der Insel Jersey. Pp. 383–384.

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—— Ueber den Zusammenhang der meteorologischen Erscheinungen mit den Sonnenflecken. [Abstract of article by Oskar V. Johansson.] Pp. 434–435.

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Gordien, H. Ueber die specifische Geschwindigkeit der positiv geladenen Träger der atmosphärischen radioaktiven Inductionen. Pp. 465–472.

Nippoldt, A. Ueber die elastische Nachwirkung bei Aneroid-Barographen. [Abstract of article by E. Rosenthal.] P. 522.

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Hann, J[ulius]. Die Anomalien der Witterung auf Island in dem Zeitraume 1851 bis 1900 und deren Beziehungen zu den gleichzeitigen Witterungsanomalien in Nordwesteuropa. Pp. 183–269.

Hann, J[ulius]. Ueber die Temperaturabnahme mit der Höhe bis zu 10 km nach den Ergebnissen der internationalen Ballonaufstiege. Pp. 571–605.

Bornstein, R. Der tägliche Gang des Luftdruckes in Berlin. Pp. 721–738.

Liznar, J. Ueber die Abhängigkeit des täglichen Ganges der erdmagnetischen Elemente in Batavia vom Sonnenfleckenstande. Pp. 791–848.

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Schweidler, Egon R. v. Beiträge zur Kenntnis der atmosphärischen Elektrizität. XVIII. Luftelektrische Messungen in Seewalchen im Sommer 1904. Pp. 1433–1454.

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Das Weltall. Berlin. 5 Jahrgang.

Iklé, Max. Die Bedeutung des Ozons für die Wärmeausstrahlung der Erde. [Review of articles by Knut Angström.] Pp. 377–378.

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Langbeck, R. Die Gewitter am 6 and 7 Juni 1905. Pp. 145–151.

Schubert, J. Die Witterung in Eberswalde im Jahre 1904. Pp. 151–158.

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—— Für den Wetterdrachen. P. 164.

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Chistoni, Ciro. Risultati pireliometrici ottenuti dal 3 luglio al 21 agosto 1902 al R. Osservatorio Geofisico di Modena. Pp. 76–82.

THE TORNADO OF MAY 10, 1905, AT SNYDER, OKLA.

By C. M. STRONG, Section Director. Dated Oklahoma, Okla., May 23, 1905.

The tornado apparently originated in the valley of the Red River, forming in full force over the ridge of gypsum hills, to the eastward, about twelve miles west and nine miles south of Olustee, Okla. Mr. Bowlin observed its first formation, as it assumed a funnel shape near his residence. After its full development it moved rapidly eastward with a slight southerly trend, crossed Gypsum Creek, and struck the residence of Mr. R. R. Hughes, which was totally destroyed. It then moved rapidly, with a zigzag course, trending northeastward, to a second residence, passed directly over and totally destroyed it. No loss of life occurred, but the owner had a very narrow escape, his dugout being filled with débris. Several residences were demolished by the tornado in its movement to the northeastward, but no lives were lost, the families having taken refuge in their storm caves.

It then struck the residence of Mr. G. B. Ralston, which was totally demolished. At the farm of Mr. Fourmentin the house, farming implements, and outbuildings were ruined, and several head of horses and cattle killed.

The little hamlet of Lock was destroyed. The tornado then lifted and passing eastward crossed the North Fork of the Red River at the mouth of Otter Creek.

While in its movement from the point of formation to the North Fork, the tornado was followed by rain with no electrical development; at the point of crossing the North Fork it was apparently joined by another tornado which had developed about two miles southeast of the Francis School House, and then lightning was first seen. The combined tornadoes then moved rapidly northeastward along the course of Otter Creek demolishing a number of residences.

Near the Peckham ranch the tornado left the course of Otter Creek, and moved directly northeastward one and a half miles, striking the western half of the town of Snyder[1] and demolishing everything in its path. One hundred houses were totally destroyed, the ground being stripped clean even of their foundations, while about one hundred and fifty more were badly wrecked, twisted off of their foundations, or damaged by flying timbers. Eighty-seven persons were killed or have since died of their injuries, 49 were seriously injured.

After passing through Snyder the tornado kept its northeasterly movement, destroying a couple of small residences within two miles of the town, then lifted and caused no further damage. Much of the débris was dropped to the ground in the vicinity of Oreana, Okla., while some was scattered fifteen to twenty miles northeastward over the country.

The path of the tornado showed a width varying from 300 to 1200 feet, damaging property by suction at times, within a radius of 1500 feet, this was especially noticeable at Snyder, where the damage was spread out over a half mile in diameter.

Throughout the path of the tornado the whirling effect was from right to left, or the reverse of the movement of the hands of a watch. The greater portion of the débris was thrown out in the southwest quarter of the tornado, and in nearly all instances, the houses were reduced to kindling wood, the pieces were driven upright into the ground at an angle of 45°, with the tops leaning to the west or southwest. In a few instances in the country, and quite a number at Snyder, when the buildings were at right-angles to the track and some distance away, the smaller débris was scattered directly toward the center of the path, but the heavier timbers of buildings remained intact. The destruction of the buildings, in these instances, was undoubtedly caused by the suction effects of the tornado. The suction effect was also noticeable, some buildings were pulled out of plumb and leaned to the west or northwest, they were also located on the east side of the track and about 1500 feet away from the center.

In a very few instances beams were found intact in the center of the track and parallel to it. On Otter Creek, where it passed through standing timber, the upper portions of the trees were torn, broken off, or twisted so as to show distinctly the same whirling effect.

The first appearance of the tornado was that of a black cloud from which was pendant a long funnel, almost vertical, and widening out from its base. To the people watching it from the front, this funnel during its course through Greer County, seemed to zigzag back and forth, apparently threatening all points of the compass to the eastward, and leaving no point for escape. To the people watching it from the towns to the northward, it appeared to be approaching and not until it passed to the eastward, were their fears relieved. At Olustee, Okla., the funnel shape was not noticeable until the tornado had passed to the eastward; it appeared as a broad band of water stretching from the earth to the cloud, and was at first thought to be a waterspout. To the people living in its front, the base of the funnel seemed enveloped in a cloud of steam pouring continu-

[1] Latitude 34° 39′ N., longitude 98° 56′ W.

ously in and upward. Lightning was not especially noticeable until the junction of the two tornadoes at the mouth of Otter Creek, then it was continuous and blinding.

During its passage through Greer County the rain and hail occurred after the tornado passed, but it was both preceded and followed by rain in its passage through Kiowa County.

The noise of the tornado was heard over a radius of twelve miles from its path, as a grinding, crashing roar that was indescribable.

The tornado path covered about 65 miles in length; the tornado was first observed at about 6:45 p. m., and last observed at 8:45 p. m., thus having an average forward movement of 30 miles per hour.

A peculiar feature noted and spoken of by a number of persons during the progress of the tornado over the storm caves in which they had sought refuge, was the drawing or uplifting force exerted upon them. They stated that while under the center of the storm it seemed that their bodies had lost weight and that they were gradually being drawn out of their places of refuge and had no will to resist the movement. In each case the storm door fastenings were broken loose and the doors thrown open for a short period of time, and then thrown back into position.

At the residence of Mr. G. E. Colville, a young man standing in front of the house, watching the approach of the tornado, stated that the first effect of its influence was the sudden uplifting of five bales of cotton, standing about 60 feet in front of him, to a height of about six feet above the ground, after which they were thrown back on end; then one bale was picked up and it passed through the air over his head striking the corner of the house to his rear; at the same time he was thrown forward to the ground, where, catching hold of the trunk of a small tree, he lay until the tornado had passed. While on the ground he saw the house gradually pushed backward about 30 feet, and then instantaneously go to pieces; at that instant the windmill close by was dashed to the ground. Mrs. Colville, who was in the house, escaped with only a few bruises, while the young man was uninjured. The house was about 200 yards from the center of the tornado track.

All houses and buildings along the path of the tornado, in the country, were completely demolished, and the loss to buildings amounts to $20,000. Where the tornado crossed the wire fences, the center was marked by the wires being cleanly cut through as though pliers had been used, the breaks being directly over each other in four-strand fences. In some instances, a dozen posts were pulled out of the ground, and thrown forward, the united wires forming a half circle on the ground.

STUDIES ON THE DIURNAL PERIODS IN THE LOWER STRATA OF THE ATMOSPHERE.

By Prof. FRANK H. BIGELOW.

VI.—GENERAL REVIEW OF THE STATUS OF COSMICAL METEOROLOGY.

COSMICAL METEOROLOGY.

A great advance is taking place in the science of meteorology, and this has been brought about during the past fifteen years. It has been due to two causes, the growth of modern physics, and the extension of observations into the strata of atmosphere high above the ground. The new theories of the constitution of matter, in which the emphasis is laid upon the electrical nature of the ultimate units of which atoms and molecules are constructed, and the transmission of energy in other waves across great distances, have disposed the scientific world to examine old conclusions from a very different point of view.

(1) In 1890 the high temperature of the sun seemed to justify its exclusion from the class of magnetized spheres, and thus to separate it from the group containing the earth. Now, however, there are numerous arguments which make it necessary to reconsider that view, and to admit that the sun is probably a highly magnetized sphere which sustains a magnetic field embracing the earth in its action.

(2) Then the radiation from the sun was considered a constant quantity, but now, there are so many lines of converging evidence to show this may not be true, that the subject has become one of serious investigation, and the belief is widespread that the sun is a variable star transmitting its energy to the earth in such ways as to produce synchronous changes in its meteorological and climatic conditions.

(3) In those days the theories of the general circulation of the atmosphere, as formulated by Ferrel, were generally considered to be correct, but the explorations of the atmosphere, by means of theodolites, nephoscopes, kites, and balloons have seriously discredited all except the central idea.

(4) In the same way, the Ferrel theory as well as the Oberbeck theory of the circulation of the air in local cyclones and anticyclones, have both become obsolete, and a new type of vortex is being considered as applicable to them.

It is evident that a reconstruction of ideas is in order all along the line, and that meteorology is passing through a transition period in its development. The general outcome is to raise meteorology from a subject which was the peculiar property of the climatologist and the forecaster into one of vital interest in cosmical science, and, indeed, one which is essential to the progress of astrophysical astronomy. This change from an empirical and statistical basis, requiring merely clerical functions in those practising the art, to a plan of operations involving the highest ranges of astronomy, mathematics, and physics in its students, is one of the most hopeful signs of the times. Meteorology has really languished for the lack of a demand for high grade scholarship, but the knowledge that the observations of pressure, temperature, vapor tension, and vectors of motion in the earth's atmosphere have an astronomical value, will, of course, facilitate the introduction of methods of precision in the observations and in the computations leading to a discussion of the results.

The research that is bringing about this change in meteorology has been one of extraordinary difficulty for two or three reasons. In the first place, by the very nature of the case, meteorology must depend largely upon handling great masses of data, at least till a higher stage of classification and unification of the laws has been attained, because the action of the several elements differs greatly from one station to another over the earth, and each station must be considered on its own merits. In astronomy, on the other hand, a ready concentration of observations, made in various places upon the same celestial object, is practicable, and this coordination leads more rapidly to a final set of constants and formulæ. The astronomical ephemeris, embracing the positions of the sun, moon, planets, and stars, with their characteristic phenomena, are, thus, readily made up, and by successive comparisons between predicted and observed places a progressive accuracy has been developed. Meteorology has not yet attained the dignity of the most elementary kind of ephemeris, but has been content with striking a rough mean or normal from a large mass of crude observations. This method has no doubt been sufficient for climatological statistics, and for such forecasts as have been attempted during the past, but with the entrance of cosmical problems into the field of work that sort of procedure is entirely inadequate.

A METEOROLOGICAL EPHEMERIS.

As already mentioned, the first line of improvement, having in view the ultimate construction of a true meteorological ephemeris, is a careful discussion of the existing data. An examination of the available observations in the various portions of the earth, convinced me several years

ago that for cosmical meteorology they are well nigh valueless in their present state. There has been an incessant change in the conditions under which the observations were made, following the exigencies of administration, or in consequence of the lack of scientific purpose and method in conducting the reductions. Thus, the hours of observation have been changed, and this has broken up the homogeneity of the series; the elevation of the station has been frequently altered; the exposure of the instruments to the weather has been modified, often radically, by the growth of our large cities; hence it is that a pure series of data extending over several years is not a common feature of any meteorological service. The ephemeris of this science must take account of a list of natural phenomena different from that found in the astronomical almanacs, namely, the pressure, the temperature, the vapor tension, and the wind vectors in the atmosphere of the earth, at the least; the frequency of the spots, the faculæ, the prominences on the sun; the intensity of the lines in the spectrum, distinguishing those of solar from those of terrestrial origin; the relative absorption of the radiation in the solar and the terrestrial envelopes, respectively; the strength of the electric and the magnetic fields in the earth's atmosphere, including the auroras, the ionization, the electric potential, and the coefficient of dissipation. In all these cases, for the construction of an ephemeris, it is not sufficient to strike a mean value from a series of observations extending over a number of years, where the individual years are not homogeneous one with the others. What we want is a series of correct yearly and monthly residuals relative to a central normal or mean value, wherein it is certain that the apparent variations from year to year are not due to faulty instruments and inadequate modes of observing, nor to incorrect and insufficient methods of computing. There is an immense mass of meteorological data which in its present state has no value for a cosmical science, because the accidental errors, that is those which can be controlled and ought to be eliminated in forming a truly homogeneous series, are larger than the residuals which can correctly be attributed to the variable solar action. *The margin of variability induced at the earth by the unsteady energy of the sun is quite narrow, and there is nothing to be squandered by poor workmanship if any useful results are to be accomplished in practical meteorology.* There is nothing scientific in attributing to the sun's action those changes which pertain to the inaccurate observer or to bad methods of working the the instruments, nor is there any justification for comparing good solar observations with bad meteorological observations. If cosmical meteorology is to be established then all rough and ready methods must be abandoned, and the work of computing and discussing the data must be placed in the hands of physicists and astrophysicists who possess scientific instincts and training. It is only by acquiring long series of accurate residuals in all the elements enumerated above, that is to say exact values for each month and year at the selected standard stations, that a suitable ephemeris can be constructed. Upon the successful accomplishment of this purpose depends the establishment of cosmical meteorology and the detection of the laws controlling the many interrelated forces which culminate in weather and climatic conditions. I maintain that the seasonal and yearly changes in climate, which each country experiences, depend upon the variable output of the solar energy, as recorded in the circulation of the sun's atmosphere and in our own atmosphere, and the sequence of these variations is a proper subject for scientific examination. This work in one sense is common to the entire earth, and yet each country has its own climatic effect to be accounted for in the general integration. No country can transfer its task to another, and each has enough to do to take care of its own observations. To some extent international cooperation is desireable and practicable, but on the whole each climatic region must work out the problem for itself. There is a common solar-terrestrial circulation which flows throughout the entire cosmical system, yet each country has a pulse of its own, and this must be discovered and analyzed before there can be any expectation of establishing an efficient seasonal meteorology.

THE PRESENT STATUS OF THE REDUCTIONS.

My own work has for many years been concerned in reducing the crude meteorological data for the sun, the earth generally, and especially for the United States, into standard conditions, from which the first approximately correct residuals may be attained. The task has been far beyond my power, with the resources at command, and the work is not yet finished. Thus, (1) from 1878 to 1893 the magnetic vectors have been properly computed, but they had to be extended by graphic methods back to 1841 and forward to 1903 in order to get even a glance at the fundamental law. (2) The diurnal magnetic vectors were worked out for 30 stations and they are in good order. Neither of these works have been published. (3) The pressures for the United States, 1873 to the present time, have been thoroughly recomputed and they are in a satisfactory state. (4) The temperatures are in process of reconstruction, but the task is much more difficult than in the case of the pressures and the work is not finished. (5) The reductions of the vapor tensions are being carried along with that of the temperatures, and they are only partly completed. There have never been any vapor tension normals available in the United States. (6) All the data of atmospheric electricity are in a chaotic state and need complete revision. (7) The ephemeris of relative sun-spot numbers is in good condition in consequence of the work of Wolfer. (8) The prominences and faculæ have been thoroughly discussed by me, but the results have not been published. (9) In the variation of the spectrum lines, and in the variability of the solar radiation as disclosed by the actinometer and bolometer, it has only quite recently been recognized that there is a real problem to be worked out, and we have as yet no true series of observations to classify.

It is evident from this statement that for the United States, where this plan of reducing the observations has been systematically in operation for several years, there remains much computing to be done before we can begin to put our meteorological ephemeris together. Until this is accomplished there can be no attempt to take up the problem of seasonal forecasting, and the quicker this work is finished the better for science in all its astrophysical branches. For it is quite probable, judging from the exposition contained in the preceding papers of this series, that there exists a beautiful yet sensitive network of forces reaching from the sun to the surface of the earth, by which we can learn to read the signs of the climate, and we may hope to be able to learn to forecast it somewhat in advance by a natural system of extrapolation. In the midst of this concatenation of forces the terrestrial magnetic field stands out as the best unifier or integrator. It is the most sensitive and delicate pulse which we possess, having one throb in the solar mass, and the other in its synchronism with the earth's meteorological elements. We shall, then, in our further discussions, use this magnetic system as the proper one about which to group all the other elements which are correlated in this great solar–terrestrial complex.

THE SUN AS A MAGNETIZED SPHERE.

The radical change, gradually brought about by numerous physical researches in our ideas regarding the ultimate constitution of matter, by which we conceive of atoms as composed of dynamic structures of balanced rapidly rotating electric charges, has, also, materially modified the attitude of mind in which we approach the problem of the

magnetization of large rotating heavenly bodies. When the atoms were regarded as hard, highly elastic, nonelectrical, and nonmagnetic spheres moving by the laws of kinetic energy in straight paths, except for the effect of collisions, it was of course difficult to prove that the sun could be magnetic of itself at the high prevailing temperature. But if the integrated forces are to be derived from electric charges in very rapid motion, and this seems to be the case, then magnetic fields are essential to the existence of every kind of matter whether in large or in small masses. Under ordinary conditions the primitive motions of the ionic charges are highly disorganized, since the motions are in every conceivable plane, and the molar or large masses do not show any outside field of force. It is, however, only necessary to organize these ionic motions relative to one plane, that is, to polarize their orbits, in order to produce a common magnetization within the mass and magnetic field outside this body. When a steel magnet is subjected to heat the field is destroyed, simply because the minor magnets, as of the atoms and molecules temporarily oriented to one axis, have been made disordered by the higher class of collisions which has been induced by the increase of the temperature. This experiment, however, by no means exhausts the natural conditions of the problem. In a rotating body like the sun the angular velocity induces a deflecting force at right-angles to the momentary motion, of every particle, $l = \omega q \cos \theta$, depending on the angular velocity, and polar distance velocity in any linear direction. When q is great, and in the case of the negative ions combined in the atom, it may approach the velocity of light, l is also a comparatively large force, so that a tendency to run into vortex motion is ever in operation. The entire mass of the sun, by the general laws of motion, also is evidently organized as a great vortex about the axis of rotation, and these two impulses doubtless tend to polarize the motions of the individual atomic ions in planes perpendicular to this axis, or to produce magnetization nearly parallel to the axis of rotation. Since the movement of the negative ions is in excess of that of the positive ions, the resultant magnetic field will be due to this excess of the action of negative electric charges above the positive charges, since for a common direction of gyration the positive and negative charges produce oppositely directed magnetic field. Finally, if the negative charges, in the atomic conflict, tend to escape from their electric bonds and to roam in disregard of any structure, then these negative charges may well tend to accumulate as an electrostatic layer on the surface of the sphere. At least the negative body-charge may, as a whole, be located farther from the center of the sphere than the positive body-charge, and this will produce internal magnetization and surface electrostatic charge, such as the earth possesses, and such as we have evidence to indicate that the sun also possesses. This dynamic view of mine comes to the same result as the static theory explained by Sutherland.[1] With this introduction I shall merely mention various results obtained in my researches, which are at least circumstantial evidence that the sun is a highly organized magnetic body, and that the numerous variations in its internal action constitute the causes for the observed changes in the external magnetic field.

(1) The polar rays of the corona, at least at minimum, conform to the normal lines of magnetic force on a sphere seen in projection, and concentrated in a ruffle at some distance from the pole.

(2) The ions in the solar atmosphere are luminous along rays of magnetic force.

(3) The coronal poles are located asymmetrically with respect to the axis of rotation, and persist from one eclipse to another in the same relative positions.

(4) The sun's external magnetic field, as measured at the earth, is so arranged that it has greater intensity in some solar longitudes than in others.

(5) By using large masses of observational material, the typical curve, attributed to difference in solar output in longitude and depending for its existence upon the structure of the sun's nucleus, has been found to be reproduced approximately, in the distribution of the sun spots and prominences in longitude, in the terrestrial magnetic elements, the electric field, the barometric pressures, the temperatures, and the local cyclonic movements in the United States.

(6) There is evidence that the periods of rotation in the higher latitudes of the sun fluctuate about a mean value synchronously with the external energy variations, showing that the entire external system is a direct effect of the forces producing at the same time the interior circulation in the mass of the sun.

(7) The inference is that the sun's magnetic field embraces the earth, and reaches it in lines perpendicular to the ecliptic, falling upon the polar regions of the earth along the planes of the magnetic meridians.

THE RADIATIONS OF THE SUN.

The electromagnetic radiation of the sun transports to the earth the other kind of energy which is concerned in the temperature excess prevailing in the Tropics over that in the polar zones, and produces the observed general and local cyclonic circulations. The coronal rays, especially in the equatorial belts of the sun, indicate that there are other forces in operation in the neighborhood of the photosphere besides those already mentioned.

(1) The spreading of the great streamers away from the plane of the ecliptic suggest an electrostatic repulsion.

(2) The streams of ions, under the action of the mechanical pressure of light, move not in radial lines, but in curves as determined by the additional magnetic and electrostatic forces prevailing in the surrounding space.

(3) It is impossible to assert that enough ions reach the upper strata of the earth's atmosphere to produce the observed variations of the terrestrial-magnetic and electric fields as registered in the lower strata, and it is not probable that this is the fact.

(4) This radial radiation of the photosphere may be to some extent variable in its output, and so produce seasonal climatic temperature and weather variations synchronous with it, as registered in the pressures and temperatures in different regions of the earth.

(5) The normal equilibrium of the earth's atmosphere is probably disturbed frequently, from day to day and hour to hour, by the interplay of this complex system of correlated forces.

THE METEOROLOGICAL EFFECTS OF THE SOLAR ENERGY.

The problem of discussing the effects of the solar radiation upon the magnetic and the electrical fields of the earth's atmosphere, and their relations to the meteorological elements, has been greatly simplified by the results of the research contained in the first four papers of this series. It has been shown that a different correlation of the quantities in consideration can be made and that in this way the intractable conditions which have so long puzzled scientists are decidedly ameliorated.

(1) The fact that there is no one synchronism common to the entire earth between solar and terrestrial causes and effects, has been explained by showing that the temperatures synchronize directly in the tropical zones, but only inversely in the temperate zones, in consequence of the inverting effects of the general circulation; and that while the pressures in the Eastern Hemisphere respond directly to the solar inpulse, they surge inversely to it in the Western Hemisphere. Similary, the precipitation and the local circulation will have to be distributed by regional conditions in the final interpretation.

[1] A possible cause of the earth's magnetism, W. Sutherland, Terr. Mag. June, 1900; September, 1900; December, 1904.

This will reconcile much data that are apparently in conflict as evidence regarding the existence of synchronism generally.

(2) The discovery of ionization in the gases of the atmosphere, generated probably by the short-wave radiation, and the determination of the several types of the temperature waves in the lower strata of the atmosphere, lifts the veil from the problems of the diurnal barometric waves, the electric potential gradient, and the rate of change in the electric charges. These seem to be direct consequences of the temperature acting upon the density of the air in the different strata, and upon the locality, whether warm or cold, sought out by the ions.

(3) The cause of the *hourly* variation of the magnetic field is plainly shown to reside in the movements of the ions from one level to another. The cause of the *daily* variation of the magnetic field is probably in large part due to the movement of the ions from one hemisphere to the other, which at the same time produce the auroral displays simultaneously in each hemisphere, and the electric earth currents as local effects in the several portions of the circuit. This change of view relieves us of the difficulty of making the sun the source of all the energy displayed in a large magnetic storm, since the initial impulse is due to that portion of the energy disturbing the normal terrestrial equilibrium, while much of the observed effect is due to the motion of the ions in a closed terrestrial circuit. It remains to discover in what proportion the energy should be distributed among these three sources, the polar magnetic field of the sun, the variable radiant energy, and the terrestrial ionic circuit.

(4) It is now apparent that in using, for the basis of my original research, the magnetic field of the earth as a register or solar pulse recorder, I have been amply justified in tracing out through it as the intermediary the synchronism between the solar surface variations, shown by the spots, faculæ, and prominences, and the temperature and pressure effects at the earth, because it is in fact an intermediate effect, and evidently the most sensitive one with which we have to deal. The subtile influences of the invisible solar radiation may be registered in several ways, as bolometric spectrum curves, as actinometer integrations, as visible energy spectra, or they may be recorded as elastic potential effects and as magnetic force vectors. The latter are the most persistent in all kinds of weather, and most available for continuous observations. It is only necessary to determine what the connecting functions are in terms of magnetic force, to infer from the magnetic intensity what are the temperatures within two miles of the ground, in the midst of the cyclonic actions, to estimate the movement of the ionic currents, and to determine the relative amount of the incoming solar radiation, and thence to learn much regarding the variable nature of the circulation within the rotating mass of the sun.

(5) It is now easy to see that several lines of scientific inquiry as to the period of the solar rotation have been misdirected. The attempt to associate magnetic storms with the solar spots has failed, because the effective surface radiation on a given meridian of the sun may or may not be associated with a large spot, which clearly depends upon the internal circulation for its existence. Besides this, the magnetic storm is in part dependent upon distinctly terrestrial conditions. The application of Schuster's periodogram to the magnetic declination, in order to determine the periodicity of the solar residuals, was incorrect for this reason. While the magnetic declination varies with the season of the year, and from one year to another, as a consequence of the solar radiation, this component is really a term in the hourly vectors only, due to the vertical rise and fall of the ions from one stratum to the other. On the other hand the horizontal and the vertical components are the only ones which the terrestrial ionic circuits between the two poles will affect, while the declination is wholly subordinate. The rotation of the sun on its axis will in any event, whether the energy is transported in the oval polar circuit or as a linear radial radiation, not much influence the declination from day to day. It was a misapplication to assert that negative results of the periodogram carry with them a decisive critical meaning regarding any solar period. This tendency to mix up terrestrial and solar data in the same mass of numerical quantities, has been also found in the count of the number of the solar prominences, and is no doubt to some extent unavoidable since in our common observations we are not readily able to distinguish between them, but it is my opinion that in the present stage of the science it is better to employ a simple comparison of the data as they stand for the discovery of synchronism and periodicity, rather than to bury the several impulses in one massive computation. What is at present urgently required in this research, is to bring together all the data in simple homogeneous series, as in a carefully constructed ephemeris, for each of the several elements of the entire problem, determine what is solar and what terrestrial, and then introduce terms in the functions which will give some chance of separating the unknowns in a satisfactory analysis. This result will best be reached by intelligent cooperation, and I have no doubt that practical methods may be devised by means of which this purpose can be accomplished. It seems to me a very important advance to have gained a general view from which to correlate and harmonize so many of the problems that have heretofore been insoluble. It will, in conclusion, be proper to give some account of the instrumental apparatus available for the future progress of the research, and to add after that a brief description of the Mount Weather Observatory.

THE GENERAL ORGANIZATION OF THE RESEARCH OBSERVATORY.

In organizing the work of an observatory appropriate to this research it is evident that the demands of meteorology in the United States naturally divide its activities into two classes.

(*a*) The first pertains to education and miscellaneous minor problems, and the second to the solar–terrestrial meteorology whose object is to advance the possibilities of daily and seasonal forecasts. The ordinary collegiate instruction in meteorology will probably be limited to climatology and elementary principles in general meteorology, until a practical application for such knowledge can be found outside the activities of the Government service. The great expense of collecting numerous simultaneous observations will no doubt preclude commercial enterprises in that direction, so that forecasting in the United States will always be confined to the U. S. Weather Bureau. In large manufacturing plants a knowledge of weather conditions is becoming more essential to successful business, so that a demand is likely to arise for well trained men in that direction. For our own service the exigencies of modern science are rapidly outgrowing the capacity of men unskilled in mathematics and physics to keep up with the advanced problems, and it is necessary for the Government to undertake the training of its own experts in the higher meteorology. The time is not far distant when each large city will require the presence of a skilled scientist in connection with the local office, especially as the universities are inclined to cooperate in the way of lectureships in connection with the courses of instruction in physics and geology. It is hoped that at Mount Weather the resident students may be employed as assistants in the various lines of work, and that an immediate contact with the highest lines of research to be inaugurated will make them understand and appreciate the requirements of physical research work. A good physical laboratory is to be constructed, the purpose of which is to afford an opportunity to train men in research methods, and to investigate the numerous problems arising in meteorology.

(*b*) The second division of the work embraces the opera-

tions of the solar physics observatory, the magnetic observatory, the balloon and kite plant, and should be operated as a unit, because the cosmical problem has branches in each of these realms of physics, and they can not be separated without injuring the progress that is to be expected from their cooperation. The primary policy of this investigation is to be determined by the fact that the energy effective in producing weather of short periods and climate of long periods, consists of solar terms and terrestrial terms, which are very closely interwoven, but must be separated from each other. In the process of disentangling the solar and terrestrial terms, respectively, the functions connecting the several phenomena, or the physical relations between them, must be carefully studied. At present the entire subject is in confusion, and no deliberate attempt can be made to work up the relative values of the several forces until the observations of the several kinds are placed side by side for comparison. The establishment of suitable series of homogeneous observations in the several branches is the first work of such an observatory. We have so recently become convinced that there is a genuine solar-terrestrial problem for the meteorologist to investigate, that but little definite has been done in putting such a comparative work in operation.

The numerous contributions to the general subject from all portions of the world are absolutely bewildering in their complexity, and we can not expect to make any serious advances unless the details of such observations can be classified in one far-reaching, comprehensive scheme. The observatory must be organized like an army, with a general supported by officers who will execute the several parts of the operations required in the plan of campaign. I shall attempt merely to enumerate, in the next paper, the instrumental methods that it is proposed to employ at Mount Weather, so far as experience shall prove them to be practicable. Every stage of the instrumental work, and that of the reduction of the observations, will imply that first-class training is required, and of course the actual success of the enterprise will depend almost entirely upon the number of expert scientists that can be procured for such a service. As stated above, the margin is not large upon which we can do the solar work, owing to the diminished effects at the earth of the sun's variations, due to its great distance from the earth, and we must waste nothing by using bad methods of work and unskilled men, if any profitable result is to be secured. Poor workmanship and untrained men are barred by reason of the rigorous scientific demands that are placed upon these operations by the natural physical conditions which prevail in cosmical meteorology.

NOTES AND EXTRACTS.

KITE WORK IN THE ATLANTIC TRADE WIND REGION.

Under date of September 7, 1905, Prof. Dr. H. Hergesell writes that he has just returned from a scientific expedition for the exploration of the upper atmosphere over the Atlantic Ocean, and adds:

I have just received the MONTHLY WEATHER REVIEW for May, and find on page 209 an interesting communication from Mr. Rotch. In one place he says: 'The trade winds and doldrums will thus be traversed and it is hoped that the meteorological conditions prevailing above them, which are practically unknown, will be at least partially revealed.'

From this it would appear as though in general no kite ascensions had been made in the trade wind regions, whereas in the region between Gibraltar, the Canaries, and the Azores, at my request, a series of kite ascensions have been made by the Prince of Monaco, extending up to an altitude of 4500 meters. I have published the results in the Comptes Rendus of the Academy of Science of Paris, and I send a copy herewith and pray that if possible you will publish at least a summary in your periodical.

'In the spring of 1904 the Prince of Monaco undertook to devote his private yacht to the study of the meteorological conditions prevailing in the atmosphere above the ocean. Prof. Dr. H. Hergesell was associated with him in this work. Hargrave kites were used having respectively 3 and 5.7 square meters of surface. The kite lines were steel wire of 0.7 and 1.0 millimeter diameter. Eight kite ascensions were made above the Mediterranean between April 12 and 24, 1904, at the beginning of the cruise, sixteen above the Atlantic, and one above the Baltic. The maximum altitude of 4510 meters was attained on the 9th of August to the northwest of the Canaries and a nearly equal altitude of 4360 meters on the 28th of August to the south of the Azores. Many other ascensions exceeded 2000 meters. The ascensions above the Mediterranean gave this general result, that at the free surface of the water there is a very rapid diminution of temperature and that the wind diminished very much with altitude. However, on the coast of Corsica with a southeast wind we found a warm current blowing from Corsica and the temperature increased with altitude, while at the same time the humidity diminished; at an altitude of a few hundred meters there was a calm. These exceptional conditions seem to be due to the influence of the neighboring coast.

'The ascensions made over the Atlantic Ocean had for their special object the exploration of meteorological conditions in the trade wind region. They began July 19, 1904, on the Portuguese coast opposite Oporto. The yacht sailed toward the Canaries which were doubled and then toward the Azores whence it returned to the Mediterranean. Throughout the whole region we made kite ascensions at convenient intervals, the last one being on September 20, 1904, with the following principal results:

'We found the trade wind blowing from the northeast in the latitude of Oporto at an altitude of 400 meters, but at the level of the sea the wind was northwest. Beginning with the latitude of Lisbon the trades were also observed in the lowest stratum as a feeble wind from the northeast. In proportion as we advanced toward the Canaries this northeast wind increased in force. From 35° north to the Canaries we observed a steady wind of seven meters per second. Farther south the velocities attained even nineteen meters per second, but only in the neighborhood of the islands. The results of all the ascensions made in this trade wind region were sufficiently concordant to permit of the following résumé:

'In the lower layers of air there is a strong diminution of temperature with altitude; the adiabatic gradient 1° per 100 meters is always attained. In the lowest stratum it is even exceeded. The thickness of this adiabatic layer varies between a 100 and 600 meters. The relative humidity which is 70 or 80 per cent at sea level increases gradually to 95 or 100 within this stratum. At the upper limit of the layer there is a sudden change, the temperature suddenly rises many degrees and the humidity suddenly diminishes to values lower than 50 per cent. After this sudden change there comes a layer of inversion or of mixture that attains sometimes a thickness of 1000 meters where the temperature continues to rise and where the humidity diminishes to 10 or 20 per cent. In this layer sometimes at an altitude of 1000 meters we find temperatures as high as 30° C., while at sea level we have only 22° or 23° C. Above the layer of mixture we find again a layer having an exactly adiabatic gradient, but in which the humidity is small, contrary to the conditions in the first adiabatic layer. However, the relative humidity increases with altitude in such a way that the hygrometric richness[1] remains constant. This permits us to conclude that the current must be descending and I will call this zone the layer of antitrade. According to our observations it attains an altitude of at least 4500 meters and probably extends much higher.

'It has been possible to determine the direction of the wind at different altitudes and even to measure the velocity by both direct and indirect methods. In the first adiabatic layer we find a trade wind from the northeast of about seven meters per second. As the height increases the wind gradually backs more frequently from north to northwest, but in two cases veered from northeast through east to southeast and south. At the inversion altitude, that is to say about 600 meters, the direction changes sometimes suddenly, and the force diminishes considerably. The layer of the trade, properly so-called, is therefore quite shallow. A current from the southwest that should correspond to the theoretical antitrade has never yet been found by kite ascensions, although these have oftentimes exceeded the altitude of the peak of Teneriffe. Many corroborating circumstances have forced me to think that the southwest winds (antitrades) observed on the peak of Teneriffe by many observers have a local origin and are due to the influence of the island.

[1] The richesse hygrometrique or hygrometric richness is a term introduced into French meteorology by Jamin about 1880, it is a ratio computed by dividing the actual vapor tension by the barometric pressure less the vapor tension, and multiplying by the constant 0.623. In other words it is the ratio of the weight of the vapor to the weight of the dry air and is very nearly identical with the so-called specific humidity which is the weight of the vapor contained in a kilogram of moist air.—[ED.]

"The northwest and southeast winds observed by us in the more elevated layers had at the most a velocity of three or four meters per second. The velocity was generally smaller in the intermediate layers over the regions that we have explored, the air in the antitrade blew especially from the northwest and the direction of the northeast trade changed with increasing altitude into north and stopped at northwest. Once we observed cirrus coming from the southwest and on that same day the wind turned from northeast to south as the altitude increased. We have often observed the trade cumuli or rolls of flat clouds stretched out in the direction of the wind. These always form in the upper part of the first adiabatic layer and therefore at an altitude of only a few hundreds of meters. The hygrometric diagrams demonstrate that there are ascending currents whose upper limit is given by the altitude of the layer of inversion where these clouds (trade cumuli?) are dissolved. When the layer of inversion has descended sufficiently low so that the ascending currents can not cool to the point of condensation they do not form cumuli. On the contrary when the cumuli do form one ought to be able to say in advance that the zone of inversion will be found at a higher level. As an example I give in the following table some of the data that resulted from one ascension :

Ascension on August 9, 1904. Location, west of the Canaries.

Height.	Temperature.	Relative humidity.	Direction of wind.
Meters.	° *C.*	*Per cent.*	°
0	23.0	80	n. 52 e.
200	20.5	88	.....
400	18.5	88	n. 36 e.
500	18.0	93	.....
600	18.9	80	.....
800	24.5	35	.....
1,000	26.4	36	n. 29 e.
1,200	26.2	16	n. 15 e.
2,000	18.0	21	.....
3,000	9.0	30	.....
4,000	−1.5	40	.....
4,500	−5.6	47	n. 25 w.

In the neighborhood of the Azores we observed winds from the northwest and the distribution of temperature and humidity also had a different character. Immediately above the ocean there existed at all hours of the day a decrease of temperature that was adiabatic or more than adiabatic. We have never observed the nocturnal inversion of temperature that is so common over the continents.

THE IMPARTIAL DISTRIBUTION OF WEATHER-CROP BULLETINS.

Several years ago it became necessary for the Chief of the Weather Bureau to devise some method by which the public might be treated with perfect fairness in the matter of publishing the weekly weather-crop bulletin. It appears that during the growing season farmers, brokers, boards of trade, transportation companies, and newspapers are each anxious to obtain, at the earliest possible moment, the latest news as communicated in these bulletins, striving to anticipate the others by a few minutes if possible, since these few minutes sometimes mean thousands of dollars to a large dealer.

A large edition of the bulletin is printed in the forenoon on Tuesday. The information it contains is known only to the few men concerned in making up the report. As a practical and fair method of distribution the printed copies are given simultaneously at 12 noon, eastern standard time, to all who wish them.

This plan is adhered to up to the present moment, and seems to give perfect satisfaction to all parties. The quick dissemination of the news throughout the country is therefore no longer the duty of the Weather Bureau, but of those who come to the Bureau for the weekly bulletins. By proper arrangement between the boards of trade, interested individuals, the newspapers, the Associated Press, other press associations, and the telegraph companies, two or more telegraph operators appear at the Weather Bureau promptly at noon Tuesday, take their copies of the printed bulletins and immediately repair to the nearest telegraph line outside the grounds of the Bureau, where they "cut in" with their portable transmitters and send the bulletin throughout the country.

The Postal Telegraph Company has a permanent station at a drug store a thousand feet away; the accompanying photograph, fig. 1, shows the Western Union operators sitting on the ground absorbed in their work, which is completed in a few minutes.

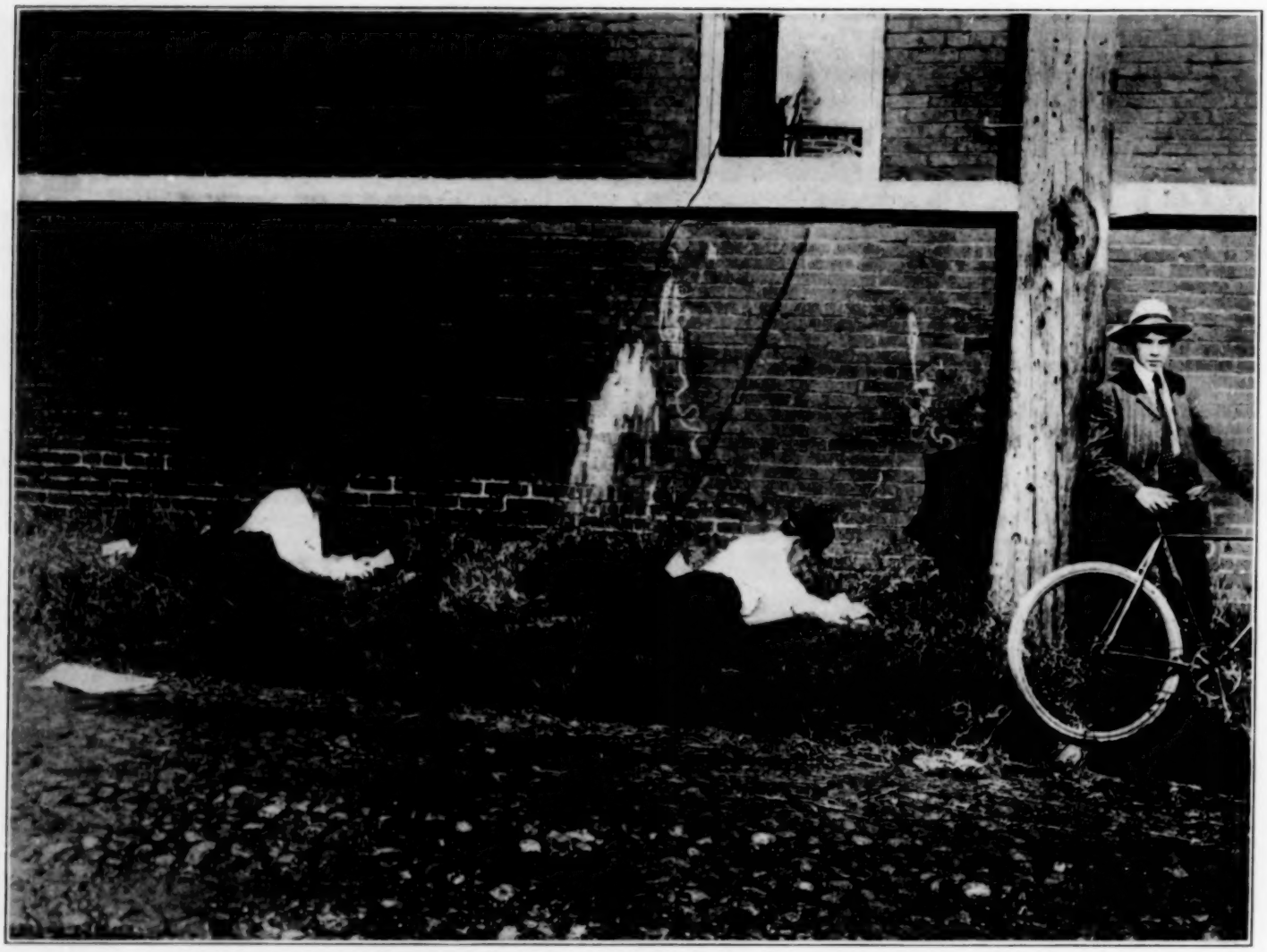

FIG. 1.—Operators telegraphing the weather-crop bulletin.

THE WEATHER OF THE MONTH.

By Mr. WM. B. STOCKMAN, Chief, Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure is graphically shown on Chart VIII and the average values and departures from normal are shown in Tables I and V.

The mean pressure for the month was highest over the Middle Atlantic States, upper Ohio Valley, eastern Tennessee, and the northern portion of the South Atlantic States, and lowest over southwestern Arizona.

The mean pressure was above the normal in New England, eastern New York, New Jersey, the extreme southeastern and southwestern portions of Virginia, extreme northeastern and western North Carolina, eastern Tennessee, the northern portions of Georgia and Alabama, the southern and middle slope and Plateau and the southern portion of the northern slope regions, and the Pacific districts; elsewhere it was below the normal.

As a rule, the changes were slight. The greatest positive departures, ranging from +0.05 to +0.08 inch, occurred on the northwestern coast of California and the coast of Washington, and the greatest negative departures, ranging from —0.05 to —0.06 inch, in the central Missouri Valley, northern North Dakota, and northeastern Montana.

The mean pressure for the month increased over that of July, 1905, in the Pacific, Plateau, and western portion of the southern slope regions, and over the region from Arkansas, Missouri, and the central portions of Iowa and Minnesota eastward to the Atlantic Ocean; elsewhere it decreased from that of the preceding month.

The greatest increase in mean pressure, ranging from +0.05 to +0.06 inch, occurred in and about the Lake region, and the greatest decrease in western North Dakota and eastern Montana, where it ranged from —0.05 to —0.08 inch.

TEMPERATURE OF THE AIR.

The mean temperature for the month was below the normal in the upper Ohio Valley, eastern portion of the east Gulf States, the Atlantic States, except northeastern North Carolina, and the east-central coast of Florida, western Oregon, and the southwestern and west-central portions of California; elsewhere it was above the normal.

The negative departures were slight, and in but a few instances were greater than —1.0°, whereas the positive departures ranged from +2.0 to +5.7 in the greater portion of the region from the slope to the upper Lakes.

By geographical districts, the mean temperature for the month was below the normal in the Atlantic and Pacific districts and above normal in the remaining sections.

Maximum temperatures of 90°, or higher, were reported from all districts, except portions of New England, New York, Pennsylvania, northeastern lower Lake region, northern upper Lake region, the mountain districts of Maryland, the Virginias, and North Carolina, and scattered sections of south-central Montana, western Wyoming, central Colorado, northern New Mexico, extreme southwestern California, and along the coasts of Oregon and Washington; of 100°, or higher, in portions of South Carolina, northeastern Georgia, and eastern Arkansas, Texas, and Kansas generally, the western portion of Oklahoma and Indian Territories, the eastern portions of Colorado and New Mexico, southern and western Arizona, California, except on the immediate coast and in the east-central portion, eastern Oregon generally, southeastern Washington, western Idaho, eastern Montana, southwestern North Dakota, central and western South Dakota generally, north-central and extreme western Nebraska, and east-central Wyoming; and of 110°, or higher, in southern and western Arizona and southeastern and portions of central and north-central California.

Freezing temperatures were reported from portions of the Rocky and Sierra Nevada Mountains.

The average temperatures for the several geographic districts and the departures from the normal values are shown in the following table:

Average temperatures and departures from normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
		°	°	°	°
New England	8	65.2	— 1.4	—11.3	—1.4
Middle Atlantic	12	71.9	— 0.8	— 7.4	—0.9
South Atlantic	10	77.3	— 0.6	— 5.2	—0.6
Florida Peninsula*	8	81.0	— 0.4	+ 2.3	+0.3
East Gulf	9	79.8	+ 0.3	— 8.1	—1.0
West Gulf	7	82.4	+ 1.8	— 7.8	—1.0
Ohio Valley and Tennessee	11	74.9	+ 0.4	— 9.2	—1.2
Lower Lake	8	69.7	+ 0.2	—11.0	—1.4
Upper Lake	10	67.7	+ 1.8	— 6.9	—0.9
North Dakota*	8	68.1	+ 2.0	+ 1.3	+0.2
Upper Mississippi Valley	11	74.2	+ 1.7	— 8.7	—1.1
Missouri Valley	11	75.7	+ 2.7	— 6.5	—0.8
Northern Slope	7	70.2	+ 2.3	— 1.4	—0.2
Middle Slope	6	77.4	+ 2.8	— 7.1	—0.9
Southern Slope*	6	80.5	+ 2.2	—12.1	—1.5
Southern Plateau*	13	78.5	+ 0.7	— 4.3	—0.5
Middle Plateau*	8	70.7	+ 1.0	+ 4.6	+0.6
Northern Plateau*	12	69.1	+ 1.3	+11.2	+1.4
North Pacific	7	60.9	— 0.5	+ 9.3	+1.2
Middle Pacific	5	66.9	— 0.2	+ 7.3	+0.9
South Pacific	4	70.4	— 1.0	+ 6.3	+0.8

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Prof. R. F. Stupart says:

The temperature was above the average from Alberta eastward to an imaginary line drawn northward and southward from the western portion of Lake Ontario, and below the average over British Columbia and from eastern Ontario to the Maritime Provinces, if we except one or two isolated localities in the latter Provinces, where a slight excess was experienced. The most positive departures occurred in parts of Alberta, Saskatchewan, and Manitoba, where they were from 3° to 4°, and the chief negative departure was reported from British Columbia, in Cariboo, and amounted to 5°.

PRECIPITATION.

The distribution of total monthly precipitation is shown on Chart III.

Average precipitation and departure from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.		*Inches.*	*Inches.*
New England	8	3.94	103	+0.1	—4.3
Middle Atlantic	12	6.10	133	+1.5	—0.1
South Atlantic	10	5.69	89	—0.7	—3.1
Florida Peninsula*	8	9.92	143	+3.0	+4.5
East Gulf	9	5.63	104	+0.2	+0.1
West Gulf	7	1.52	42	—2.1	+4.2
Ohio Valley and Tennessee	11	4.29	123	+0.8	—2.6
Lower Lake	8	3.78	127	+0.8	—0.4
Upper Lake	10	3.48	117	+0.5	+1.3
North Dakota*	8	2.37	142	+0.7	+1.8
Upper Mississippi Valley	11	4.27	144	+1.3	—1.0
Missouri Valley	11	3.66	120	+0.6	+2.0
Northern Slope	7	0.90	69	—0.4	+2.7
Middle Slope	6	1.70	68	—0.8	+4.0
Southern Slope*	6	2.03	84	—0.4	+6.4
Southern Plateau*	13	0.88	56	—0.7	+5.0
Middle Plateau*	8	0.57	66	—0.3	+0.7
Northern Plateau*	12	0.18	38	—0.3	—1.4
North Pacific	7	0.79	89	—0.1	—7.8
Middle Pacific	5	T.	100	0.0	—2.6
South Pacific	4	0.00	100	0.0	+3.1

* Regular Weather Bureau and selected cooperative stations.

The precipitation was generally in excess over the eastern half of the county, except in eastern and extreme western North Carolina, South Carolina, Georgia, extreme southern Florida, southeastern Alabama, southeastern and north-central

Tennessee, and southwestern Virginia; over the western half there was a deficiency. The excess ranged from 2.0 to 5.9 inches generally over Florida, and the deficiency ranged from 2.0 to 5.0 inches on the coast of the Carolinas. Over portions of the Middle Atlantic States, eastern lower Lake region, upper Ohio Valley, east-central Tennessee, northeastern Alabama, central Oklahoma, Missouri, Minnesota, and southwestern lower Michigan the excess ranged from 2.0 to more than 4.0 inches. Over southern Louisiana and eastern Texas the deficiency ranged from 2.0 to 3.5 inches.

By geographical districts the precipitation was normal in the middle and southern Pacific districts, below normal in the slope, Plateau, and northern Pacific regions, and the western Gulf and South Atlantic States, and above normal in the remaining districts.

In Canada.—Professor Stupart says :

The rainfall was above the average in most parts of British Columbia, but only moderately so, the positive departures being about six-tenths of an inch. In the lower Lake region and in the Georgian Bay district it was likewise in many localities above the average, the positive departures being especially marked over Lake Ontario and for some distance surrounding that lake; elsewhere over the Dominion, with the exception of a marked excess at Prince Albert and vicinity, also in Cape Breton and to a small extent in the Qu'Appelle Valley, the rainfall was everywhere deficient and usually to a large amount. In Quebec, also over the Maritime Provinces, with the exception of Cape Breton, the absence of rain was attended by serious droughts causing considerable destruction of property by forest fires. In many parts of Alberta, Saskatchewan, and Manitoba, the rainfall was likewise very deficient. Under the existing conditions positive departures of 5 30 inches at Prince Albert, and of 2.68 inches at Sydney, C. B , were remarkable.

WIND.

The maximum wind velocity at each Weather Bureau station for a period of five minutes is given in Table I, which also gives the altitude of Weather Bureau anemometers above ground.

Following are the velocities of 50 miles and over per hour registered during the month:

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Lewiston, Idaho	27	62	w.	Topeka, Kans.	18	53	nw.
Minneapolis, Minn	20	56	n.	Yankton, S. Dak.	20	61	n.
St. Paul, Minn	4	59	n.				

CLEAR SKY AND CLOUDINESS.

Average cloudiness conditions obtained in the Ohio Valley and Tennessee, and lower Lake region. They were above the average in New England, Florida Peninsula, eastern Gulf States, upper Lake region, North Dakota, upper Mississippi Valley, and the middle Plateau and north Pacific regions. In the remaining districts they were below the average.

The distribution of clear sky is graphically shown on Chart IV, and the numerical values of average daylight cloudiness, both for individual stations and by geographic districts, appear in Table I.

The averages for the various districts, with departures from the normal, are shown in the following table:

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	5.5	+ 0.5	Missouri Valley	3.8	— 0.3
Middle Atlantic	5.4	— 0.6	Northern Slope	3.6	— 0.1
South Atlantic	5.0	— 0.2	Middle Slope	3.6	— 0.2
Florida Peninsula	5.9	+ 0.7	Southern Slope	2.6	— 2.2
East Gulf	6.0	+ 1.1	Southern Plateau	2.8	— 0.6
West Gulf	3.1	— 1.3	Middle Plateau	3.0	+ 0.2
Ohio Valley and Tennessee	4.5	0.0	Northern Plateau	2.7	— 0.5
Lower Lake	4.5	0.0	North Pacific	5.4	+ 1.4
Upper Lake	5.0	+ 0.2	Middle Pacific	2.2	— 0.3
North Dakota	4.3	+ 0.4	South Pacific	2.2	— 0.5
Upper Mississippi Valley	4.4	+ 0.3			

HUMIDITY.

The relative humidity was normal in New England; below in the South Atlantic States, and the Pacific, northern Plateau, and southern slope regions.

The averages by districts appear in the following table:

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
	%			%	
New England	82	0	Missouri Valley	71	+ 4
Middle Atlantic	79	+ 3	Northern Slope	55	+ 3
South Atlantic	80	— 2	Middle Slope	65	+ 6
Florida Peninsula	82	+ 2	Southern Slope	60	— 3
East Gulf	83	+ 3	Southern Plateau	47	+ 2
West Gulf	76	+ 1	Middle Plateau	40	+ 4
Ohio Valley and Tennessee	76	+ 4	Northern Plateau	36	— 7
Lower Lake	74	+ 3	North Pacific	75	— 2
Upper Lake	77	+ 2	Middle Pacific	60	— 7
North Dakota	72	+ 6	South Pacific	64	— 2
Upper Mississippi Valley	77	+ 7			

DESCRIPTION OF TABLES AND CHARTS.

By Mr. WM. B. STOCKMAN, Chief, Division of Meteorological Records.

For description of tables and charts see page 20 of REVIEW for January, 1905.

TABLE I.—*Climatological data for U. S. Weather Bureau stations, August, 1905.*

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.										Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.			Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.					Total.	Departure from normal.	Days with .01 or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					
New England.							65.2	— 1.4											82	3.94	+ 0.1										
Eastport	76	69	82	29.87	29.95	— .01	59.2	— 1.4	80	23	68	46	28	51	30	55	53	85	1.76	— 1.7	7	5,644	s.	28	e.	26	7	9	15	6.5	
Portland, Me.	103	81	117	29.86	29.98	.00	65.0	— 1.8	89	11	72	48	28	58	26	60	57	80	2.78	— 1.0	11	5,723	s.	25	w.	22	9	11	11	5.7	
Concord	288	70	79	29.68	29.98	.00	65.1	— 2.4	87	10	76	41	28	54	35				2.59	— 1.1	15	2,936	sw.	16	w.	2	8	12	11	5.7	
Northfield	876	16	60	29.07	30.00	+ .02	61.1	— 1.8	86	10	73	38	26	50	34	57	55	85	4.02	0.0	13	4,488	s.	27	nw.	8	12	9	10	5.2	
Boston	125	115	181	29.85	29.99	.00	68.6	— 0.5	90	22	76	51	28	62	25	63	59	74	3.39	— 1.0	13	6,552	sw.	24	e.	15	13	8	10	5.0	
Nantucket	12	14	90	29.97	29.98	— .01	66.9	— 0.8	83	23	73	53	15	61	21	63	62	88	4.93	+ 1.8	13	11,780	sw.	39	ne.	16	10	12	9	5.5	
Block Island	26	11	46	29.97	30.00	+ .01	67.2	— 0.8	82	7	72	53	28	62	15	64	62	86	4.83	+ 1.4	12	11,154	sw.	40	ne.	27	10	10	11	5.5	
Providence	159	57	67	29.83	30.00	+ .01	68.0	.....	90	22	77	49	28	59	27	62	60	79	3.00	.....	12	4,090	w.	18	sw.	30	14	6	11	4.9	
Hartford	159	115	132	29.82	29.99	.00	68.2	.....	88	22	77	45	28	59	27	62	59	78	5.08	.....	14	4,084	s.	28	s.	11	9	11	11	5.9	
New Haven	106	116	154	29.88	29.99	.00	68.5	— 1.5	86	22	76	50	28	61	22	64	61	81	7.20	+ 2.1	11	5,898	sw.	31	n.	24	10	11	10	5.1	
Mid. Atlantic States.							71.8	— 0.8											79	6.10	+ 1.5										5.4
Albany	97	102	115	29.88	29.98	.00	68.7	— 1.8	89	24	78	48	28	59	31	62	59	76	3.83	— 0.2	14	4,723	s.	27	w.	6	9	13	9	5.6	
Binghamton	875	79	90	29.07	29.99	.00	66.6	— 0.6	85	10	77	18	28	56	35				2.80	— 1.2	12	3,535	ne.	34	sw.	5	8	12	14	6.6	
New York	314	108	350	29.66	29.99	— .01	72.2	— 0.1	88	11	79	57	28	66	20	66	63	78	5.23	+ 0.5	13	7,177	s.	37	nw.	29	8	12	11	5.8	
Harrisburg	374	94	104	29.61	30.00	— .01	71.8	— 0.3	87	13	80	53	28	64	23	65	62	76	5.28	+ 0.8	13	4,468	w.	40	ne.	13	10	13	8	5.2	
Philadelphia	117	116	184	29.88	30.00	.00	73.6	— 0.2	90	23	81	57	20	66	21	66	62	74	9.57	+ 5.2	13	6,860	sw.	40	n.	13	8	10	13	6.2	
Scranton	805	111	119	29.15	30.00	.00	68.4	.....	87	11	78	46	28	59	32	63	60	78	5.27	.....	12	4,671	sw.	24	ne.	6	8	12	11	5.7	
Atlantic City	52	39	48	29.95	30.00	.00	71.8	0.0	89	7	77	56	28	66	20	67	65	81	6.22	+ 1.4	13	5,872	sw.	23	ne.	26	6	14	11	6.0	
Cape May	17	48	52	30.00	30.02	+ .02	71.6	— 1.6	85	30	77	55	28	66	19	67	.....	.....	8.31	+ 3.5	13	5,741	s.	25	ne.	25	4	24	3	5.2	
Baltimore	123	69	117	29.87	29.99	— .02	74.2	— 0.7	90	13	82	56	28	66	24	67	64	73	6.85	+ 2.8	13	5,106	sw.	31	se.	24	6	11	14	6.4	
Washington	112	59	76	29.87	29.98	— .03	73.6	— 1.0	90	13	82	52	28	65	26	68	66	82	9.75	+ 5.8	11	4,229	s.	26	nw.	25	8	16	7	5.1	
Lynchburg	681	83	88	29.27	30.00	— .02	74.2	— 1.1	92	7	84	51	28	65	33	68	65	81	6.21	+ 2.2	12	2,089	sw.	22	nw.	6	15	14	2	4.0	
Mount Weather	1,725	10	57	28.24	30.00	— .01	69.2	.....	86	13	76	53	18	62	22	63	60	81	2.88	.....	13	9,065	se.	40	w.	30	8	16	7	5.2	
Norfolk	91	102	111	29.92	30.02	+ .02	76.0	— 0.6	95	7	84	58	29	68	24	69	67	79	6.83	— 0.7	11	6,541	s.	39	s.	13	11	12	8	5.1	
Richmond	144	144	153	29.86	30.00	— .01	75.8	.....	96	7	85	58	19	67	27				4.01	.....	11	5,936	s.	42	w.	7	9	19	3	4.4	
Wytheville	2,293	40	47	27.70	30.02	+ .01	69.0	— 1.5	85	6	78	48	28	60	30	64	62	88	2.29	— 2.2	16	2,560	w.	20	nw.	7	11	11	9	4.9	
S. Atlantic States.							77.3	0.0											80	5.69	— 0.7										5.0
Asheville	2,253	53	75	27.73	30.02	.00	70.2	— 0.3	88	7	80	47	29	61	31	64	62	84	4.08	— 0.5	14	3,718	se.	26	e.	17	7	16	8	5.9	
Charlotte	773	68	76	29.21	30.03	+ .01	75.4	— 0.7	96	7	84	55	28	67	27	68	66	79	8.67	+ 3.3	17	3,981	ne.	28	sw.	15	10	10	11	5.4	
Hatteras	11	12	47	30.01	30.02	+ .02	78.0	+ 0.6	88	31	83	63	29	72	16	72	70	80	1.65	— 4.7	7	9,756	sw.	40	ne.	26	21	7	3	3.1	
Raleigh	376	71	79	29.62	30.00	— .01	76.0	+ 0.3	96	7	85	56	28	67	26	69	66	80	7.33	+ 1.2	13	4,248	s.	26	nw.	7	12	9	10	4.9	
Wilmington	78	82	90	29.91	29.99	— .01	77.1	— 1.1	93	31	85	58	28	69	25	71	69	81	2.93	— 4.5	11	5,415	sw.	27	s.	8	11	14	6	4.4	
Charleston	48	14	92	29.96	30.01	.00	79.4	— 1.1	94	31	85	67	28	74	20	74	72	81	2.63	— 5.0	10	8,128	s.	38	ne.	28	8	19	4	5.0	
Columbia, S. C.	351	41	57	29.63	30.00	— .01	77.6	— 2.2	98	6	87	57	28	68	29	70	68	78	9.30	+ 2.4	14	4,185	s.	25	sw.	25	13	8	10	5.1	
Augusta	180	89	97	29.81	30.00	— .01	79.4	0.0	99	7	89	62	28	70	28	71	68	74	5.18	— 0.1	12	4,272	ne.	24	ne.	26	14	14	3	3.8	
Savannah	65	81	89	29.93	30.00	— .01	79.6	— 0.7	94	31	86	68	28	73	23	73	71	81	4.20	— 3.5	12	5,122	ne.	21	ne.	18	8	12	11	6.2	
Jacksonville	43	101	129	29.92	29.97	— .04	79.9	— 1.2	91	17	86	69	27	74	17	75	74	87	10.97	+ 4.5	19	5,920	ne.	35	ne.	28	6	18	7	5.9	
Florida Peninsula.							81.9	— 0.2											82	9.51	+ 3.2										5.9
Jupiter	28	10	48	29.95	29.98	— .02	81.6	+ 0.6	92	1	88	71	18	75	19	76	75	84	10.72	+ 5.2	21	5,790	sw.	36	se.	12	3	25	3	5.8	
Key West	22	10	53	29.96	29.98	.00	83.8	— 0.1	91	11	89	74	16	79	17	77	74	75	3.14	— 1.6	14	5,495	se.	31	nw.	17	7	18	6	5.5	
Tampa	34	79	96	29.94	29.97	— .03	80.2	— 1.2	93	10	87	70	12	73	19	75	74	87	14.66	+ 5.9	26	4,308	ne.	29	se.	24	3	18	10	6.4	
East Gulf States.							79.8	+ 0.5											83	5.63	+ 1.2										6.0
Atlanta	1,174	190	216	28.79	30.01	.00	76.2	— 0.3	93	7	84	60	28	68	23	70	68	83	3.58	— 1.2	14	6,435	se.	48	w.	23	7	13	11	5.8	
Macon	370	93	99	29.61	30.00	— .01	79.4	.....	98	6	88	66	28	71	27				4.28	.....	11	3,911	ne.	24	ne.	27	6	16	9	5.8	
Pensacola	56	79	96	29.91	29.97	— .01	80.5	+ 0.1	94	25	86	69	29	75	21				9.71	+ 1.4	17	5,865	s.	43	sw.	17	7	11	13	6.5	
Birmingham	709	136	143	29.24	29.99	.00	78.0	— 1.8	94	6	86	64	27	70	22				7.54	+ 2.0	14	4,638	sw.	30	n.	25	4	15	12	6.5	
Mobile	57	88	96	29.91	29.97	— .01	81.3	+ 1.0	94	22	89	68	29	74	21	75	74	85	8.03	+ 1.1	18	3,700	s.	25	sw.	18	4	19	8	5.9	
Montgomery	223	100	112	29.74	29.99	.00	79.9	+ 0.1	96	7	88	63	28	72	24	73	71	82	2.49	— 1.6	9	4,127	e.	30	nw.	16	4	21	6	5.8	
Meridian	375	84	93	29.58	29.96	— .02	78.8	+ 1.0	94	24	87	64	27	70	24				5.25	+ 0.8	17	3,085	s.	32	nw.	14	8	12	11	5.8	
Vicksburg	247	62	74	29.68	29.95	— .03	81.0	+ 0.9	95	22	89	67	29	72	22	75	73	83	4.47	+ 1.0	11	3,831	e.	32	nw.	7	8	15	8	5.2	
New Orleans	51	88	121	29.90	29.95	— .03	82.8	+ 1.3	95	25	90	70	29	76	20	76	74	81	3.95	— 2.1	17	5,082	sw.	45	n.	1	3	18	10	6.3	
West Gulf States.							82.4	+ 1.8											76	1.52	— 2.1										3.1
Shreveport	249	77	84	29.70	29.96	— .01	82.8	+ 1.5	97	6	92	67	28	74	24	74	71	74	1.52	— 0.7	6	3,847	se.	36	nw.	20	22	6	3	3.2	
Fort Smith	457	79	94	29.48	29.95	— .02	80.6	+ 2.9	98	24	91	64	30	70	27	72	70	77	1.73	— 2.0	8	4,361	e.	41	nw.	6	19	11	1	2.6	
Little Rock	357	93	100	29.60	29.96	— .02	80.0	+ 1.8	95	24	88	66	27	71	23	74	71	80	4.01	— 0.1	10	4,198	ne.	44	nw.	15	18	8	5	4.1	
Corpus Christi	20	48	53	29.91	29.93	.00	83.2	+ 1.8	96	1	89	73	30	77	21	77	75	83	0.18	— 2.9	4	7,825	se.	25	se.	18	20	9	2	2.6	
Fort Worth	670	106	114	29.25	29.94	.00	83.0	.....	102	19	94	62	28	72	27				0.56	.....	2	6,095	s.	30	n.	20	22	9	0	2.7	
Galveston	54	106	112	29.90	29.96	.00	83.4	+ 0.2	93	26	88	74	30	79	16	77	75	80	2.00	— 3.5	6	6,819	s.	22	ne.	29	19	10	2	3.0	
Palestine	510	73	79	29.42	29.94	— .03	82.0	+ 1.6	95	25	91	66	28	73	22	74	71	75	0.72	— 2.0	3	4,463	ne.	22	n.	20	20	10	1	3.1	
San Antonio	701	80	91	29.20	29.90	— .03	84.8	+ 2.6	101	1	97	67	28	73	29	73	68	65	0.51	— 3.3	2	4,328	se.	42	n.	2	18	13	0	3.4	
Taylor	583	55	63	29.33	29.94	— .01	84.0	.....	99	26	95	65	28	73	26				0.82	.....	3	5,432	s.	31	nw.	2	21	10	0	2.9	
Ohio Val. and Tenn.							74.9	+ 0.4											76	4.20	+ 0.8										4.5
Chattanooga	762	106	112	29.21	30.01	+ .01	77.1	+ 1.2	95	6	86	58	29	69	26	70	67	75	2.46	— 1.3	11	4,481	s.	27	se.	10	9	12	10	5.4	
Knoxville	1,004	35	88	28.98	30.01	.00	75.6	+ 0.8	92	6	85	57	29	66	27	69	67	83	7.35	+ 3.3	14	4,070	ne.	38	nw.	7	7	15	9	5.4	
Memphis	399	76	97	29.57	29.98	.00	79.4	+ 0.7	93	6	88	63	27	71	21	72	70	77	5.28	+ 1.7	9	4,814	sw.	40	nw.	15	19	10	2	2.7	
Nashville	546	79	91	29.42	30.00	.00	78.2	+ 0.7	95	6	88	61	28	69	25	70	67	76	2.97	— 0.4	9	3,505	w.	34	sw.	7	12	16	3	4.1	
Lexington	989	75	102	28.95	29.99	— .02	73.6	— 0.4	91	6	82	56	26	65	24				4.11	+ 0.6	10	5,617	ne.	30	w.	23	16	14	1	3.3	
Louisville	525	114	136	29.42	30.00	.00	77.3	+ 1.0	96	6	87	59	26	68	28	69	65	71	3.76	+ 0.2	11	4,822	sw.	23	ne.	25	10	14	7	5.0	
Evansville	431	72	82	29.51	29.97	— .02	77.7	.....	92	6	86	60	26	69	24				2.19	.....	6	3,666	ne.	25	sw.	14	15	14	2	3.5	
Indianapolis	822	154	164	29.12	29.99	— .01	74.6	+ 1.0	90	13	84	56	26	66	25	67	64	73	2.74	— 0.5	9	5,303	s.	31	sw.	5	10	11	10	5.6	
Cincinnati	628	152	160	29.32	29.98	— .03	75.3	+ 0.3	92	6	84	58	26	67	28	67	63	70	4.66	+ 0.9	12	4,129	se.	27	nw.	5	9	15	7	4.9	
Columbus	824	173	190	29.13	29.99	— .02	73.3	+ 1.0	90	23	83	53	26	64	27	65	61	72	5.54	+ 2.3	10	6,393	sw.	38	nw.	5	13	11	7	4.5	
Pittsburg	842	336	352	29.10	29.99	— .02	72.1	— 0.7	91	24	81	51	3	63	28	65	61	74	3.11	— 0.1	12	6,090	sw.	31	w.	30	8	17	6	5.3	
Parkersburg	638	77	84	29.36	30.00	— .01	73.2	— 0.4	90	6	83	54	3	63	32	66	63	78	5.54	+ 2.2	12	3,177	sw.	20	nw.	13	14	13	4	4.0	
Elkins	1,940	41	50	28.02	30.02	.00	68.7	— 0.6	88	14	80	46	27	57	34	62	60	86	3.97	+ 0.7	10	2,385	w.	16	sw.	14	12	14	5	4.8	
Lower Lake Region.							69.7	+ 0.2											74	3.78	+ 0.6										4.5
Buffalo	767	178	206	29.16	29.98	— .01	68.2	— 0.3	83	10	75	52	28	61	20	62	58	72	3.51	+ 0.3	10	8,744	sw.	48	sw.	15	7	19	5	5.9	
Oswego	335	76	91	29.61	29.97	— .02	66.1	— 2.1	90	10	74	51	28	59	26	61	58	76	4.32	+ 1.7	11	6,066	s.	24	n.	25	16	9	6	3.5	
Rochester	523	81	102	29.43	30.00	+ .01	68.6	+ 0.2	92	10	78	50	28	59	27	61	58	74	5.26	+ 2.2	12	5,271	sw.	25	w.	30	12	15	4	4.6	
Syracuse	597	97	113	29.36	30.00	+ .01	67.2	.....	87	10	76	50	28	59	26				6.07	.....	10	6,894	s.	38	sw.	6	10	16	5	4.8	
Erie	713	92	102	29.22	29.98	— .03	69.0	— 0.5	86	10	76	53	3	62	24	63	59	72	5.08	+ 1.8	13	6,935	s.	36	sw.	5	10	14	7	5.4	
Cleveland	762	190	201	29.17	29.98	— .03	70.0	+ 0.4	87	10	77	55	3	63	25	65	62	76	3.61	+ 0.5	10	9,119	se.	42	sw.	5	10	16	5	4.7	
Sandusky	629	62	70	29.32	29.99	— .02	72.3	+ 1.3	90	9	79	58	18	66	24				2.04	— 1.1	10	5,191	sw.	34	nw.	5	17	8	6	3.7	
Toledo	628	120	127	29.32	29.99	— .01	72.0	+ 1.2	92	12	81	55	2	63	26	64	60	72	2.23	— 0.5	7	6,116	sw.	41	w.	5	17	8	6	3.6	
Detroit	730	153	193	29.21	29.99	— .02	71.4	+ 1.7	90	12	80	55	2	63	24	64	60	73	4.18	+ 1.5	7	7,281	sw.	33	s.	19	15	8	8	4.5	
Upper Lake Region.							67.7	+ 1.6											77	3.48	+ 0.5										5.0
Alpena	609	13	92	29.32	29.99	— .01	65.8	+ 2.3	89	11	76	46	2	56	30	61	58	80	3.10	— 0.4	8	6,322	nw.	31	se.	18	11	12	8	4.9	
Escanaba	612	40	48	29.32	29.97	— .02	65.2	+ 0.6	83	21	74	40	1	56	28	61	58	78	1.48	— 2.0	9	4,584	s.	22	nw.	21	14	10	7	4.6	
Grand Rapids	707	127	165	29.23	29.99	.00	70.0	— 0.2	89	11	79	51	25	61	27	63	60	76	5.48	+ 3.1	9	6,190	ne.	38	sw.	21	12	11	8	5.0	
Houghton	668	66	74	29.23	29.95	— .02	65.3	.....	85	20	74	40	1	56	29	.....	.....	.....	0.91	.....	9	4,414	e.	28	w.	21	15	8	8	4.5	
Marquette	734	76	116	29.18	29.98	.00	65.0	+ 1.4	92	29	73	44	2	57	29	58	55	74	1.95	— 0.9	10	6,043	n.	40	s.	18	10	11	10	5.5	
Port Huron	638	70	120	29.30	29.99	— .01	68.7	+ 1.7	90	12	77	49	2	60	25	62	59	74	4.14	+ 1.6	9	7,496	sw.	33	ne.	29	12	10	9	4.9	
Sault Ste. Marie	614	40	61	29.30	29.98	— .01	63.6	+ 2.8	83	11	73	44	3	54	35	58	55	79	2.72	0.0	7	4,339	nw.	30	nw.	30	8	13	10	5.7	
Chicago	823	140	310	29.11	29.97	— .03	74.0	+ 3.1	92	12	80	62	20	63	27	66	63	73	4.46	+ 1.5	10	8,610	sw.	43	w.	5	10	13	8	5.3	
Milwaukee	681	124	142	29.26	29.99	— .01	71.4	+ 3.1	89	5	79	58	1	64	27	64	62	76	3.18	+ 0.4	13	7,187	ne.	40	n.	5	19	5	7	3.7	
Green Bay	617	49	86	29.32	29.98	— .01	68.8	+ 2.1	91	11	78	46	1	59	26	63	60	80	4.41	+ 1.8	15	5,779	sw.	43	w.	19	6	16	9	5.8	
Duluth	1,139	11	47	28.74	29.94	— .03	64.8	+ 1.1	91	29	73	41	1	57	29	58	55	78	3.55	+ 0.2	11	7,943	ne.	40	nw.	29	12	11	8	4.9	

TABLE I.—*Climatological data for U. S. Weather Bureau stations, August, 1905*—Continued.

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.										Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.			Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.					Total.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					
North Dakota.							**68.7**	**+ 2.3**											**72**	**2.84**	**+ 0.9**								**4.3**	
Moorhead	935	8	57	28.93	29.93	− .03	68.4	+ 3.2	92	28	79	48	1	58	34	63	61	83	6.08	+ 3.4	9	4,137	se.	26	nw.	8	15	9	7	4.2	
Bismarck	1,674	16	57	28.18	29.93	− .01	68.8	+ 1.3	101	28	82	45	24	56	44	59	54	67	1.71	− 0.2	10	6,115	nw.	32	w.	3	16	12	3	4.2	
Devils Lake	1,482	11	44	28.37	29.92	− .02	66.9	.....	94	28	78	45	23	55	34	60	57	77	1.47	.....	10	6,066	se.	32	w.	20	10	13	8	5.1	
Williston	1,875	14	44	27.93	29.88	− .05	69.0	+ 2.5	98	9	84	44	19	54	43	57	50	60	0.74	− 0.4	8	6,581	se.	37	nw.	15	20	9	2	3.6	
Upper Miss. Valley.							**74.2**	**+ 1.7**											**77**	**4.27**	**+ 1.3**								**4.4**	
Minneapolis	.....	102	208	.....	.....	.....	70.8	+ 1.7	95	10	80	50	1	62	31	.....	.....	...	4.32	+ 1.1	13	7,663	se.	56	n.	20	13	9	9	5.0	
St. Paul	837	171	179	29.04	29.93	− .04	71.0	+ 1.9	96	10	80	54	1	62	31	63	60	72	6.07	+ 2.8	11	5,622	se.	59	n.	4	16	9	6	4.3	
La Crosse	714	71	87	29.19	29.94	− .04	71.6	+ 1.5	92	11	81	55	16	62	27	.....	.....	....	8.18	+ 4.9	12	4,154	s.	36	n.	20	13	13	5	4.7	
Madison	974	70	78	28.94	29.96	− .03	70.6	+ 0.9	91	11	80	55	1	62	26	64	60	75	2.48	− 0.6	10	5,516	s.	30	ne.	5	16	10	5	4.0	
Charles City	1,015	8	58	28.89	29.94	− .03	71.8	− 0.2	93	11	83	52	25	61	34	66	64	82	5.46	+ 2.6	13	3,930	se.	22	s.	17	11	12	8	4.8	
Davenport	606	71	79	29.30	29.95	− .03	75.2	+ 2.4	94	12	85	55	26	66	27	68	66	78	1.93	− 1.6	12	4,420	e.	25	sw.	22	13	7	11	4.4	
Des Moines	861	84	101	29.05	29.94	− .03	75.5	+ 3.5	94	11	85	58	26	66	26	68	66	77	5.21	+ 2.0	13	4,724	sw.	36	sw.	18	12	15	4	4.2	
Dubuque	698	100	117	29.23	29.96	− .02	73.5	+ 1.9	94	11	82	57	26	65	28	66	63	75	3.07	− 0.1	12	3,937	s.	28	ne.	19	9	10	12	5.7	
Keokuk	614	63	78	29.29	29.95	− .03	76.9	+ 2.4	94	11	87	56	26	67	27	69	67	81	3.16	+ 0.3	9	4,195	sw.	30	nw.	21	17	10	4	3.6	
Cairo	356	87	93	29.60	29.97	− .02	78.2	+ 1.2	93	6	87	63	27	70	21	71	69	80	3.79	+ 1.0	10	3,930	sw.	35	nw.	16	13	10	8	4.6	
La Salle	536	56	64	29.42	29.98	− .01	73.8	.....	94	12	84	54	26	64	29	.....	.....	....	3.19	.....	13	4,105	sw.	24	sw.	13	14	13	4	3.7	
Peoria	609	11	45	29.33	29.99	.00	74.4	.....	95	12	86	54	26	63	30	.....	.....	....	1.36	.....	12	4,687	s.	37	w.	22	13	13	5	4.4	
Springfield, Ill.	644	82	93	29.30	29.97	− .02	75.8	+ 2.4	93	12	86	56	26	66	26	68	65	76	4.70	+ 2.4	8	4,831	s.	27	nw.	22	16	8	7	4.1	
Hannibal	534	75	109	29.40	29.96	− .02	76.4	+ 2.2	93	24	86	60	26	66	27	.....	.....	....	4.61	+ 2.4	14	4,974	sw.	40	nw.	22	15	9	7	4.1	
St. Louis	567	208	217	29.36	29.96	− .03	77.6	+ 0.8	92	12	86	60	25	69	23	69	66	71	2.58	− 0.9	10	5,890	s.	44	nw.	16	16	11	4	4.0	
Missouri Valley.							**75.7**	**+ 2.7**											**71**	**3.66**	**+ 0.6**								**3.8**	
Columbia, Mo.	784	11	84	29.14	29.94	− .03	76.6	+ 0.6	93	21	88	57	26	65	29	.....	.....	....	6.91	+ 4.4	10	3,914	s.	27	nw.	22	18	9	4	3.3	
Kansas City	963	78	95	28.96	29.96	− .01	78.4	+ 2.7	95	16	88	64	19	69	30	70	66	72	4.47	+ 0.6	8	4,553	se.	33	ne.	16	19	9	3	2.6	
Springfield, Mo	1,324	98	104	28.60	29.97	.00	75.4	+ 1.4	90	24	84	60	27	66	26	70	67	79	6.70	+ 3.0	9	5,230	s.	39	nw.	14	24	4	3	2.6	
Topeka	.....	85	89	.....	.....	.....	78.4	+ 3.6	99	23	90	62	26	67	29	.....	.....	....	1.71	− 2.2	7	4,740	s.	53	nw.	18	20	10	1	2.6	
Lincoln	1,189	75	84	28.67	29.90	− .03	77.0	+ 3.4	96	16	88	62	26	66	30	69	65	73	6.45	+ 3.2	13	5,658	s.	44	nw.	17	13	12	6	3.9	
Omaha	1,105	115	121	28.77	29.92	− .04	77.6	+ 3.9	94	10	87	62	7	68	26	68	64	69	3.03	− 0.3	8	4,737	s.	30	nw.	17	14	7	10	4.8	
Valentine	2,598	47	54	27.28	29.94	.00	72.6	+ 2.3	99	28	86	51	21	59	42	62	57	66	0.85	− 1.2	8	6,000	nw.	44	nw.	31	16	14	1	3.4	
Sioux City	1,135	96	164	28.72	29.90	− .05	75.4	+ 3.8	96	10	86	54	7	65	36	.....	.....	....	1.84	− 1.4	8	7,200	se.	48	ne.	20	11	11	9	5.0	
Pierre	1,572	48	50	28.30	29.93	− .01	74.6	+ 1.8	102	28	87	54	24	62	37	63	58	66	2.09	+ 0.4	6	4,458	se.	31	nw.	23	16	10	5	4.1	
Huron	1,306	56	67	28.55	29.92	− .03	71.8	+ 3.4	98	10	84	52	24	59	42	64	61	75	3.72	+ 1.1	9	6,330	se.	36	ne.	23	15	12	4	3.7	
Yankton	1,233	55	65	28.60	29.89	− .06	75.0	+ 3.2	97	29	86	55	19	64	33	.....	.....	....	2.52	− 0.6	7	5,060	sw.	61	n.	20	7	6	18	6.3	
Northern Slope.							**70.2**	**+ 2.3**											**55**	**0.90**	**− 0.4**								**3.6**	
Havre	2,505	11	44	27.29	29.86	− .05	70.7	+ 5.1	96	24	87	41	29	55	45	57	48	52	0.30	− 1.1	7	6,596	nw.	37	nw.	3	24	5	2	2.5	
Miles City	2,371	42	50	27.42	29.91	− .02	74.6	+ 2.9	100	25	88	46	16	61	38	60	52	52	0.05	− 1.0	2	4,168	se.	33	nw.	15	19	11	1	3.4	
Helena	4,110	8	56	25.82	29.93	− .01	68.4	+ 1.9	93	24	82	42	16	54	39	52	40	42	0.21	− 0.4	4	5,368	sw.	39	sw.	25	15	12	4	3.5	
Kalispell	2,962	11	34	26.90	29.89	− .04	64.8	.....	95	8	81	35	16	48	43	50	39	48	0.11	.....	5	4,295	w.	24	s.	2	20	7	4	3.0	
Rapid City	3,234	46	50	26.62	29.96	+ .03	69.6	− 0.3	96	28	81	48	24	58	33	60	55	63	1.66	+ 0.3	4	1,793	w.	36	n.	31	22	3	6	2.7	
Cheyenne	6,088	56	64	24.13	29.96	+ .04	66.8	+ 1.8	89	27	81	44	16	52	38	53	46	56	1.93	+ 0.4	9	5,710	nw.	40	s.	22	8	16	5	5.0	
Lander	5,372	26	36	24.73	29.96	+ .04	66.6	+ 1.7	90	24	84	41	18	50	44	53	45	56	0.57	− 0.1	6	2,544	sw.	38	w.	30	9	20	2	4.5	
Yellowstone Park	6,200	11	47	23.98	29.97	+ .04	61.6	.....	85	8	76	36	16	47	41	48	39	52	0.32	.....	6	5,247	sw.	33	w.	9	12	15	4	4.3	
North Platte	2,821	43	52	27.09	29.95	+ .01	74.6	+ 3.2	100	29	88	54	19	61	34	65	61	70	1.57	− 0.8	7	4,324	se.	30	sw.	21	18	9	4	3.3	
Middle Slope.							**77.4**	**+ 2.8**											**65**	**1.70**	**− 0.8**								**3.6**	
Denver	5,291	129	136	24.82	29.97	+ .05	73.0	+ 2.9	93	17	88	52	7	59	35	57	48	52	0.67	− 0.8	8	5,118	s.	38	n.	8	7	19	5	5.0	
Pueblo	4,685	80	86	25.35	29.94	+ .03	74.0	+ 1.7	99	21	90	52	13	58	42	61	55	61	0.56	− 1.5	5	4,582	nw.	38	n.	5	10	20	1	4.1	
Concordia	1,398	42	47	28.49	29.92	− .03	79.3	+ 4.9	104	23	91	62	26	67	32	69	65	68	0.55	− 2.1	4	3,974	s.	36	nw.	5	19	11	1	3.1	
Dodge	2,509	44	54	27.38	29.91	− .02	78.2	+ 3.0	100	22	91	60	15	65	34	67	63	69	1.81	− 1.0	4	5,792	se.	39	n.	15	17	13	1	4.1	
Wichita	1,358	78	86	28.55	29.94	− .01	79.6	+ 3.1	100	24	91	63	26	68	29	69	65	68	1.34	− 1.7	4	4,927	s.	30	w.	20	25	4	2	2.5	
Oklahoma	1,214	79	86	28.67	29.91	− .03	80.4	+ 1.4	98	22	91	63	30	70	29	71	67	71	5.29	+ 2.6	8	5,828	se.	34	n.	20	20	9	2	2.7	
Southern Slope.							**80.8**	**+ 4.2**											**60**	**0.46**	**− 2.0**								**2.6**	
Abilene	1,738	45	54	28.17	29.92	.00	83.8	+ 3.6	102	19	95	66	10	72	30	69	62	55	0.28	− 2.4	5	4,657	s.	24	n.	2	18	10	3	3.5	
Amarillo	3,676	10	49	26.29	29.93	+ .01	77.7	+ 4.8	98	16	91	60	9	65	34	65	59	62	0.63	− 1.7	6	8,001	se.	32	sw.	15	25	6	0	1.8	
Roswell	3,578	9	57	26.37	29.92	+ .04	77.6	.....	100	18	94	57	9	62	40	64	58	64	0.01	.....	1	3,143	s.	22	w.	22	21	10	0	2.5	
Southern Plateau.							**78.7**	**+ 1.0**											**47**	**0.76**	**− 0.8**								**2.8**	
El Paso	3,762	10	110	26.21	29.88	+ .04	80.2	+ 1.2	97	18	93	64	19	68	32	63	55	51	0.53	− 1.3	6	5,692	e.	43	e.	6	10	20	1	3.9	
Santa Fe	7,013	33	39	23.38	29.89	.00	68.6	+ 2.3	86	21	81	51	12	56	33	54	45	50	0.75	− 1.9	12	4,449	ne.	27	e.	30	20	11	0	2.8	
Flagstaff	6,907	12	44	23.48	29.90	+ .06	64.5	− 0.2	87	19	80	43	13	49	41	53	46	64	2.34	− 1.0	16	4,255	n.	26	sw.	13	12	15	4	4.2	
Phoenix	1,108	50	56	28.68	29.79	.00	90.0	+ 1.8	112	7	103	70	26	77	38	70	60	42	0.92	0.0	5	3,592	e.	30	se.	22	15	14	2	3.7	
Yuma	141	16	46	29.64	29.78	+ .02	90.8	+ 0.1	111	29	104	72	11	78	36	73	65	49	0.02	− 0.3	1	4,464	sw.	30	s.	7	28	3	0	0.8	
Independence	3,910	11	42	25.95	29.85	+ .04	78.2	+ 0.6	100	7	93	53	1	63	38	56	36	26	T.	− 0.2	0	5,533	se.	29	se.	2	27	4	0	1.7	
Middle Plateau.							**72.6**	**+ 1.1**											**40**	**0.57**	**− 0.1**								**3.0**	
Carson City	4,720	82	92	25.31	29.89	+ .05	68.6	+ 1.8	95	7	85	45	16	52	45	53	42	42	0.13	0.0	1	4,895	sw.	36	w.	13	27	4	0	0.8	
Winnemucca	4,344	18	56	25.62	29.92	+ .04	70.8	+ 0.2	101	7	91	41	29	51	49	51	36	34	0.12	0.0	2	4,036	sw.	46	sw.	25	20	10	1	2.5	
Modena	5,479	10	43	24.66	29.89	+ .03	70.4	+ 0.7	95	7	87	47	13	54	43	53	40	44	1.71	+ 0.5	5	7,951	sw.	45	w.	20	12	17	2	4.0	
Salt Lake City	4,366	105	110	25.64	29.91	.00	75.8	+ 1.2	96	8	89	55	18	63	33	56	41	34	0.58	− 0.1	3	4,521	se.	38	n.	25	15	10	6	4.0	
Durango	6,546	18	56	23.76	29.91	+ .01	67.4	.....	91	21	84	45	12	50	44	51	41	50	1.23	.....	11	4,529	nw.	33	se.	27	15	14	2	3.6	
Grand Junction	4,603	43	51	25.41	29.92	+ .02	77.2	+ 1.6	98	22	91	56	18	63	36	57	44	37	0.33	− 0.8	3	3,800	e.	24	sw.	27	21	8	2	2.9	
Northern Plateau.							**71.7**	**+ 1.4**											**36**	**0.10**	**− 0.5**								**2.7**	
Baker City	3,471	32	58	26.45	29.97	+ .02	67.2	+ 1.1	97	7	84	38	31	51	44	50	35	37	T.	− 0.2	0	4,583	nw.	36	sw.	27	19	11	1	2.8	
Boise	2,739	61	68	27.12	29.91	− .02	74.6	+ 2.4	103	7	90	43	31	60	37	54	37	30	T.	− 0.2	0	4,105	nw.	34	ne.	4	17	12	2	3.4	
Lewiston	757	10	51	29.12	29.92	— .03	75.2	+ 0.6	105	6	91	48	29	60	43	.....	.....	....	0.05	− 0.5	1	5,197	e.	62	w.	27	26	4	1	1.2	
Pocatello	4,483	46	54	25.51	29.92	.00	72.4	+ 2.8	96	8	87	48	18	58	42	53	38	36	0.35	− 0.1	5	5,931	e.	29	sw.	13	13	18	0	3.4	
Spokane	1,929	101	110	27.93	29.94	− .01	69.0	0.0	99	7	83	44	31	55	41	53	39	40	0.06	− 0.3	3	4,715	sw.	39	sw.	27	22	6	3	2.5	
Walla Walla†	1,000	71	79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
N. Pac. Coast Reg.							**60.9**	**− 0.5**											**75**	**0.79**	**− 0.1**								**5.4**	
North Head	211	11	56	29.88	30.11	+ .08	57.9	− 1.2	66	5	61	51	25	55	9	56	54	88	0.62	− 0.4	8	9,985	nw.	36	nw.	8	7	15	9	6.0	
Port Crescent	259	12	29	29.82	30.10	+ .08	54.8	− 1.9	67	6	62	38	25	48	23	.....	.....	....	1.68	+ 0.9	8	3,406	w.	13	w.	8	7	16	8	5.5	
Seattle	123	185	224	29.95	30.08	+ .08	62.6	− 1.7	83	8	70	47	31	55	24	56	52	72	0.44	− 0.1	5	5,065	w.	26	s.	27	9	11	11	5.6	
Tacoma	213	113	120	29.83	30.05	+ .03	62.6	+ 1.0	84	8	72	44	31	53	26	.....	.....	....	0.39	− 0.3	4	4,029	n.	25	sw.	30	8	12	11	5.4	
Tatoosh Island	86	7	57	29.98	30.07	+ .07	56.0	+ 0.2	67	5	60	48	22	52	14	54	53	92	2.18	− 0.2	13	6,572	sw.	34	s.	13	6	10	15	6.8	
Portland, Oreg.	153	68	96	29.88	30.04	+ .03	66.2	+ 0.3	90	8	77	46	31	56	33	58	51	64	0.19	− 0.4	5	3,757	nw.	20	nw.	14	11	14	6	4.5	
Roseburg	498	56	60	29.48	30.01	+ .01	66.2	0.0	95	7	82	41	31	51	41	55	47	59	T.	− 0.2	0	2,975	nw.	20	w.	27	17	6	8	3.8	
Mid. Pac. Coast Reg.							**60.9**	**− 0.3**											**60**	T.	**0.0**								**2.2**	
Eureka	62	62	80	29.98	30.05	+ .05	56.9	+ 1.0	66	4	61	48	25	53	16	54	52	85	0.00	− 0.1	0	4,246	nw.	30	nw.	30	12	9	10	4.9	
Mount Tamalpais	2,375	11	18	27.54	29.96	+ .03	69.0	.....	96	7	76	46	3	62	30	54	41	41	0.00	.....	0	8,689	nw.	46	nw.	27	28	2	1	0.9	
Red Bluff	332	50	56	29.32	29.86	.00	80.2	− 0.9	110	7	96	55	28	64	42	60	44	34	0.00	0.0	0	3,100	s.	15	sw.	2	28	3	0	0.8	
Sacramento	69	106	117	29.81	29.89	+ .04	72.0	− 0.7	101	7	88	52	2	56	40	60	52	56	T.	0.0	0	6,334	s.	25	s.	3	29	2	0	0.6	
San Francisco	155	161	167	29.82	29.99	+ .07	58.4	− 0.3	73	29	64	50	27	53	19	54	52	84	T.	0.0	0	8,913	w.	35	w.	5	17	11	3	3.8	
S. Pac. Coast Reg.							**70.4**	**− 1.0**											**64**	**0.00**	**0.0**								**2.2**	
Fresno	330	67	70	29.52	29.87	+ .05	80.0	− 1.7	107	8	98	56	4	62	41	58	40	31	0.00	0.0	0	4,766	nw.	19	nw.	3	29	2	0	0.5	
Los Angeles	338	116	123	29.56	29.92	+ .04	70.4	0.0	101	29	81	54	4	60	33	61	57	75	0.00	0.0	0	3,940	w.	20	w.	1	10	20	1	3.0	
San Diego	87	94	102	29.82	29.91	+ .02	67.4	− 1.5	88	30	72	58	5	63	21	62	60	80	0.00	− 0.1	0	4,054	w.	19	nw.	26	30	0	1	2.4	
San Luis Obispo	201	47	54	29.74	29.96	+ .02	64.0	− 0.8	96	29	77	47	31	52	40	56	52	72	0.00	0.0	0	3,329	nw.	18	nw.	4	18	13	0	3.0	
West Indies.																															
Grand Turk	11	6	20	29.99	30.00	+ .02	84.4	.....	93	20	91	72	9	78	19	.....	.....	....	1.46	.....	11	.....	e.	.....	.....	.....	.....	.....	.....	.....	.....	
Havana	57	87	105	29.92	29.98	+ .02	81.4	− 0.8	91	2	88	69	27	75	18	.....	.....	....	5.86	− 0.2	10	5,511	e.	29	w.	27	5	21	5	5.1	
San Juan	82	48	90	29.90	29.99	+ .02	80.9	− 0.5	88	26	86	70	6	76	16	76	74	79	7.43	+ 1.6	20	8,683	e.	38	se.	20	16	13	2	4.2	

* More than one date. † No record on account of sickness of observer.

TABLE II.—*Climatological record of cooperative observers, August, 1905.*

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Alabama.	°	°	°	*Ins.*	*Ins.*
Alaga				2.94	
Anniston	96	59	76.0	7.36	
Ashville	95	59	76.2	6.76	
Benton				6.15	
Bermuda	96	62	79.6	8.01	
Boligee	98	61	80.8	3.34	
Bridgeport				3.35	
Burkeville				4.51	
Calera				7.30	
Camp Hill	97	60	79.0	5.35	
Citronelle	96	64	80.4	4.59	
Clanton	98	60	78.2	5.34	
Cordova	96	59	78.5	6.30	
Dadeville				2.88	
Daphne	95	66	81.4	8.44	
Decatur	96	62	78.2	5.28	
Delmar	94	60	77.4	7.36	
Demopolis				6.70	
Eufaula	92	63	78.6	3.22	
Evergreen	100	64	81.8	3.18	
Flomaton	98	61	82.4	6.59	
Florence	96	57	79.2	4.14	
Fort Deposit	96	61	79.7	3.69	
Gadsden	102	64	80.0	4.72	
Goodwater	97	63	78.8	5.33	
Greensboro	96	64	79.8	9.21	
Greenville				5.35	
Guntersville				2.43	
Hamilton	96	58	79.0	9.24	
Letohatchie				0.68	
Livingston	97	66	80.4	5.15	
Lock No. 4	99	58	78.2	2.96	
Lucy	97	64	80.6	1.82	
Madison Station	98	60	79.4	2.63	
Maplegrove	100	60	78.8	6.43	
Marion	97	61	79.5	5.44	
Milstead				2.19	
Newbern	98	63	79.5	5.79	
Notasulga				3.32	
Oneonta	95	54	77.0	5.85	
Opelika	96	60	78.8	9.32	
Ozark	95	63	79.9	2.87	
Prattville	96	64	79.9	1.27	
Pushmataha	98	60	80.8	11.42	
Riverton	95	56	78.3	6.11	
Scottsboro	94	59	76.3	3.49	
Selma	99	65	81.6	5.72	
Springhill	91	61	79.0	12.14	
Talladega	99	59	78.0	6.43	
Tallassee				3.01	
Thomasville	98	61	80.6	6.83	
Tuscaloosa	96	64	79.7	8.16	
Tuscumbia	97	62	79.6	4.94	
Tuskegee	97	60	80.4	1.91	
Union Springs	94	65	80.0	7.40	
Uniontown	96	57	78.2	6.32	
Valleyhead	96	59	76.4	3.73	
Vienna				3.05	
Wetumpka	96	59	80.3	3.01	
Alaska.					
Chestochena	81	27	52.6	3.20	
Copper Center	74	20	52.2	0.72	
Fort Egbert	82	29	60.0	2.72	0.5
Forl Gibbon	81	28	52.4	3.02	
Fort Liscum		36		9.35	
Juneau	73	38	54.4	7.85	
Kenai	78	27	54.6	6.26	
Ketchumstock	78	17	48.9	1.48	
Killisnoo	74	36	54.1	4.30	
Loring	85	39	58.0	12.71	
Orca	80	45	56.3	12.99	
Sitka	69	45	56.3	7.38	
Skagway	75	32	54.8	2.14	
Sunrise	70	31	53.3	4.46	
Teikhill	75	24	52.5	1.02	
Udakta	68	42	52.7	3.39	
Arizona.					
Allaire Ranch				3.61	
Alpine				2.66	
Arizona Canal Co. Dam	114	70	91.6	0.43	
Benson	104	52	76.3	1.68	
Blue	94	48	70.2	2.19	
Bowie	100	69	85.8	2.70	
Buckeye	114	67	90.2	0.46	
Casagrande	118	73	95.2	0.02	
Cochise[*1]	105	65	76.8	2.25	
Congress	104	57	85.4	0.96	
Douglas	101	61	80.6	3.27	
Dudleyville	105	63	83.5	1.09	
Duncan	105	49	78.4	0.90	
Flagstaff				2.24	
Fort Apache	97	50	71.6	1.96	
Fort Defiance	90	42	65.6	0.98	
Fort Grant	94	57	76.4	2.07	
Fort Huachuca	95	48	70.2	3.55	
Fort Monave	118	68	92.4	0.66	
Gilabend	116	72	94.0	0.05	
Globe	102	61	82.0	3.91	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Arizona—Cont'd.	°	°	°	*Ins.*	*Ins.*
Greaterville	92	50	73.5	5.42	
Greer				2.95	
Holbrook	100	51	76.5	0.76	
Huachuca Res				5.87	
Jerome	98	59	78.4	4.90	
Kingman	109	58	81.8	1.43	
Maricopa	119	66	92.9	0.72	
Mesa	115	67	89.7	0.69	
Mohawk Summit[*1]	120	90	99.6	0.00	
Natural Bridge				3.19	
Nutrioso				1.27	
Oracle	97	60	79.1	3.37	
Oro				2.00	
Parker	126	61	92.6	0.00	
Phoenix	110	67	88.2	0.61	
Picacho[*1]	114	81	92.5	1.80	
Pinal Ranch				1.65	
Pinto				0.80	
Prescott	102	47	73.0	3.78	
Roosevelt	114	70	91.0	0.83	
San Carlos	106	65	86.0	2.56	
San Simon	111	60	84.2	2.25	
Seligman	98	48	72.0	2.32	
Sentinel[*1]	117	80	94.8	0.00	
Showlow				1.36	
Tempe	118	66	89.5	1.94	
Thatcher	100	58	81.1	0.85	
Tombstone	92	56	75.4	4.19	
Tonto	107	64	86.4	2.72	
Tucson	107	66	86.1	0.56	
Upper San Pedro	101	55	76.4	1.05	
Vail[*6]	106	73	88.2	0.16	
Walnut Grove				0.17	
Willcox	103	55	79.2	1.89	
Williams	92	45	67.7	3.22	
Yarnell				2.02	
Young	101	51	78.8	4.65	
Arkansas.					
Alicia	93	60	78.0	2.30	
Amity	96	60	79.2	2.41	
Arkadelphia	99	63	81.1	2.80	
Arkansas City				4.04	
Arnett	90	55	75.4	6.26	
Batesville	96	60	79.0	1.41	
Beebranch	96	57	77.4	2.25	
Blackrock				4.41	
Blanchard	95	59	79.2	1.71	
Brinkley	101	60	80.8	4.92	
Calico Rock				4.60	
Camden	96	64	81.0	4.36	
Clarendon				4.74	
Conway	101	61	82.0	2.88	
Corning				4.94	
Dallas	95	59	78.7	1.80	
Dardanelle				2.56	
Des Arc	98[4]	61[4]	79.6[4]	1.06	
Dodd City	96	54	75.8	3.30	
Dutton	91	55	73.4	2.85	
Eldorado	98	62	81.2	2.44	
Eureka Springs	96	53	76.8	4.04	
Fayetteville	96	55	77.7	7.19	
Forrest City	95	60	79.0	4.98	
Fulton				1.20	
Hardy	96	57	75.6	3.54	
Heber	99	56	79.4	1.96	
Helena	96	60	80.2	3.51	
Hope	102	62	82.3	2.84	
Howe	103	60	82.6	0.60	
Huntsville	95	51	76.4	3.18	
Jonesboro	92	59	75.8	3.26	
Lacrosse	101	59	80.0	2.59	
Lonoke	101	61	80.8	3.54	
Lutherville	97	55	77.4	5.25	
Luxora				2.80	
Malvern	99	60	80.2	3.30	
Marked Tree				2.02	
Marvell	98	59	80.2	3.85	
Mossville	91[4]	55[4]	74.3[4]	1.87	
Mountain Home	94[4]	59[4]	76.8[4]	5.12	
Newport	99	61	81.4	2.59	
Oregon	96	52	76.2	2.84	
Osceola	97	60	80.2	2.90	
Ozark	99	60	78.8	4.58	
Perry	95	63	81.1	3.85	
Pinebluff	97	62	80.6	6.03	
Pocanontas	96	61	79.6	2.98	
Pond	93	52	75.9	6.74	
Prescott	100	63	81.6	5.11	
Princeton	100	53	78.7	2.35	
Rison	101	60	80.6	2.45	
Russellville	96	60	78.8	6.14	
Silversprings	94	55	76.3	3.12	
Spielerville	97	61	79.7	5.45	
Springbank				2.09	
Stuttgart	98	59	79.8	4.88	
Tate	100	55	79.8	3.20	
Texarkana	98	61	81.6	3.64	
Warren	100	59	81.0	5.99	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Arkansas—Cont'd.	°	°	°	*Ins.*	*Ins.*
White Cliffs				0.36	
Wiggs	97	56	78.2	4.07	
Winchester	100	60	82.2	5.37	
Witts Springs	93	58	75.3	4.85	
California.					
Alturas				0.00	
Angiola	113	51	79.0	0.00	
Auburn	106	50	78.6	0.00	
Azusa	108	49	74.0	0.00	
Bagdad	115	73	94.6	0.00	
Bakersfield	112	54	79.4	0.00	
Barber				0.06	
Barstow	111	58	82.6	T.	
Bear Valley				0.32	
Berkeley	77	46	59.8	0.00	
Bishop	99	45	72.7[b]	0.00	
Blue Canyon	91	40	65.2	0.15	
Bodie	87	21	57.2	0.00	
Bowman				0.37	
Branscomb	100	38	64.5	0.00	
Brush Creek	106	40	70.8	0.07	
Butte Valley				0.30	
Calexico	112	72	90.8	0.00	
Campbell	88	40	63.8	0.00	
Campo				0.25	
Cedarville	106	39	71.6	0.10	
Chico	107	56	78.0	0.04	
Claremont	108	49	75.4	0.00	
Cloverdale	105	45	71.0	0.00	
Colfax	103	49	75.7	0.00	
Colusa				0.00	
Craftonville				0.00	
Cuyamaca	85	45	66.0	T.	
Delta	108	50	76.5	0.00	
Diamond				0.00	
Dobbins	106	56	78.9	0.05	
Durham	109	46	76.6	0.25	
Elcajon	106	50	74.1	0.01	
Electra	106	55	78.2	0.00	
Elmwood	108	47	75.8	0.00	
Elsinore	108	48	83.2	0.00	
Emigrant Gap	94	49	71.2	0.50	
Escondido	102	46	70.6	0.00	
Folsom	115	51	77.6	T.	
Fordyce				0.20	
Fort Ross	68	46	58.2	0.00	
Fruitvale				0.00	
Georgetown	102	48	73.7	0.08	
Gilroy (near)	96	43	65.7	0.00	
Glendora				0.00	
Grass Valley				0.50	
Greenville	100	33	65.2	0.96	
Hanford	110	51	78.1	0.00	
Healdsburg	104	40	69.8	0.00	
Hollister	95	43	65.0	0.00	
Indio	116	69	93.5	0.00	
Idylwild	98	41	69.2	0.17	
Imperial	118	68	93.6	T.	
Iowa Hill	100	50	74.2	0.06	
Irvine				0.00	
Isabella	105	55	81.2	0.00	
Jamestown	105	45	74.8	0.00	
Kennedy Gold Mine				0.10	
Kentfield				0.00	
King City	96	42	67.0	0.00	
Le Grand	112	55	78.9	0.00	
Lemoncove	109	55	80.6	0.00	
Lick Observatory	88	50	70.2	0.00	
Livermore	106	44	69.4	0.00	
Lodi	101	46	70.7	0.00	
Lone Pine	98	43	72.8	0.00	
Los Gatos	96	46	68.0	0.00	
Magalia	106	53	77.6	0.07	
Mammoth	118	52	89.2	0.00	
Marysville	110	49	75.3	0.10	
Merced	114	41	74.6	0.00	
Mercury				0.00	
Mills College				0.00	
Milo				0.00	
Milton (near)	103	54	76.0	T.	
Mohave	113	68	90.8	0.00	
Mokelumne Hill	101	48	76.4	0.03	
Montague	105	39	72.3	0.00	
Monterio	100	56	75.5	0.02	
Monumental	96	35	65.0	0.00	
Mount St. Helena				0.00	
Napa	92	50	69.1	0.00	
Needles	113	73	93.2	0.00	
Nellie				T.	
Nevada City	100	43	69.8	0.64	
Newcastle	106	56	79.4	0.19	
Newman	110	50	78.0	0.00	
Niles	90	44	66.2	T.	
Nordhoff	97	40	68.0	0.00	
North Bloomfield	102[f]	47[f]	72.6[f]	0.10	
Oakland	79	48	62.9	0.00	
Ontario (near)	106	49	74.0	0.00	
Orland	115	48	79.9	T.	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
California—Cont'd.	°	°	°	*Ins.*	*Ins.*
Orleans	115	45	77.0	0.00	
Oroville (near)	111	51	76.6	0.08	
Ozena	.....	.....	.....	0.00	
Palermo	111	49	76.5	0.13	
Peachland	91	41	63.7	T.	
Pilot Creek	.....	.....	.....	0.53	
Pine Crest	100	50	67.6	0.00	
Placerville	97	44	68.8	0.24	
Point Lobos	72	54	60.5	0.00	
Point Lomo	.....	.....	.....	0.00	
Point Reyes Light	64	49	54.4	0.00	
Porterville	109	54	79.6	0.00	
Poway	100	55	74.0	0.00	
Redding	106	53	79.6	0.00	
Redlands	107	51	77.4	0.00	
Reedley	112	51	79.7	0.00	
Represa	.....	.....	.....	T.	
Riovista	101	53	71.6	0.00	
Riverside	106	49	73.7	0.00	
Rocklin	108	49	74.9	0.00	
Rohnerville	.....	.....	.....	0.00	
Sacramento	93	49	69.2	0.00	
San Bernardino	108	47	76.1	0.00	
San Jacinto	105	45	72.7	0.37	
San Jose	91	46	66.9	0.00	
San Rafael	88	49[a]	67.6[b]	0.00	
Santa Barbara	96	52	66.2	0.00	
Santa Clara	92	40	65.5	0.00	
Santa Cruz	90	39	61.8	0.00	
Santa Maria	83	47	63.6	T.	
Santa Rosa	91	41	64.6	0.00	
Shasta	112	50	81.0	0.00	
Sierra Madre	100	50	71.0	0.00	
Sisquoc Ranch	.....	.....	.....	0.00	
Sisson	106	36	69.6	0.00	
Sonoma	91	44	65.0	0.00	
Sonora	97	64	81.2	0.00	
Southeast Farallon	62	49	55.1	0.00	
Sterling	.....	.....	.....	0.65	
Stockton	100	50	71.6	0.00	
Storey	108	48	77.2	0.00	
Summerdale	90	47	68.1	0.00	
Summit	79	50	70.2	0.00	
Susanville	95	41	67.4	0.52	
Tejon	100	62	78.8	0.00	
Towle	95	46	68.6	0.13	
Truckee	90	38	61.2	0.00	
Tulare	108	50	77.4	0.00	
Tustin	.....	.....	.....	0.00	
Ukiah	107	40	71.0	0.00	
Upland	99	46	72.3	0.00	
Upperlake	106	37	70.7	0.00	
Upper Mattole	.....	.....	.....	0.00	
Vacaville	108	44	72.6	0.00	
Ventura	90	52	65.4	0.00	
Visalia	108	49	77.4	0.00	
Volcano	119	78	97.2	0.00	
Wasco	111	56	80.6	0.00	
Weldon	.....	.....	.....	0.00	
West Saticoy	.....	.....	.....	0.00	
Wheatland	105	50	74.6	0.00	
Willets	108	34	68.2	0.00	
Willow	110	65	83.8	T	
Woodside	87	45	65.2	0.00	
Yosemite	100	40	69.5	0.01	
Yreka	.....	.....	.....	0.16	
Zenia	97	31	64.2	0.00	
Colorado.					
Akron	.....	.....	.....	0.86	
Alford	91	37	64.1	0.75	
Antelope Springs	80	28	53.8	1.86	
Ashcroft	81	34	55.6	1.39	
Blaine	108	48	78.4	1.99	
Boulder	95	54	72.4	0.22	
Breckenridge	79	31	54.6	2.11	
Buenavista	84	38	62.6	1.27	
Burlington	99	50	73.8	1.34	
Canon City	98	49	72.8	1.39	
Cheesman	91	45	66.9	0.75	
Cheyenne Wells	100	54	74.6	1.12	
Clearview	77	36	55.5	4.95	
Colbran	93	44	68.6	0.85	
Colorado Springs	90	47	67.2	0.98	
Conejos	87	40	63.6	0.73	
Cripplecreek	.....	.....	.....	4.59	
Delta	99	40	72.3	0.75	
Eagle	87	34	61.4	0.59	
Fort Collins	93	45	68.3	1.25	
Fowler	.....	.....	.....	1.55	
Fox	101	49	73.6	1.58	
Frances	82	42	62.4	1.83	
Fruita	99	44	74.1	0.99	
Garnett	87	30	59.8	1.44	
Gleneyre	95	44	67.0	1.70	
Glenwood Springs	91	37	65.7	1.03	
Grand Valley	97	42	71.2	1.07	
Greeley	97	41	71.2	0.60	
Grover	.....	.....	.....	1.65	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Colorado—Cont'd.	°	°	°	*Ins.*	*Ins.*
Gunnison	85	31	59.2	1.09	
Hahns Peak	84	31	56.8	0.30	
Halls Gulch	67	31	48.8	2.11	
Hamps	92	46	68.4	1.27	
Hoehne	99	41	68.6	3.78	
Holly	102	54	78.4	1.40	
Holyoke	99	51	74.4	1.24	
Idaho Springs	83	46	65.0	1.52	
Lake City	83	40	60.3	1.21	
Lake Moraine	74	34	55.6	2.80	
Lamar	104	53	79.0	1.14	
Laporte	.....	.....	.....	1.42	
Las Animas	105	51	77.2	0.53	
Lay	91	32	64.0	0.36	
Leroy	97	48	72.3	1.96	
Longs Peak	77	32	54.9	1.75	
Mancos	92	44	67.4	0.80	
Meeker	88	38	64.6	1.01	
Montrose	91	41	64.4	0.87	
Moraine	83	39	60.0	0.21	
Pagoda	90	35	63.8	0.47	
Paonia	96	50	72.2	0.59	
Platte Canon	.....	.....	.....	0.50	
Rockyford	100	51	74.6	0.45	
Saguache	88	42	63.3	0.15	
Salida	89	38	63.8	1.18	
Santa Clara	88	43	63.4	4.67	
Sapinero	88	36	61.8	0.61	
Sheridan Lake	102	51	75.6	0.20	
Silt	91	46	69.0	1.05	
Silverton	79	32	55.3	1.95	
Sugar City	.....	.....	.....	1.26	
Sugar Loaf	86	38	59.2	2.30	
Trinidad	95	49	70.0	3.01	
Victor	81	40	59.5	5.11	
Vilas	.....	.....	.....	0.18	
Wagon Wheel	83	26	55.6	1.50	
Waterdale	98	45	68.6	1.12	
Westcliffe	86	34	60.9	1.34	
Whitepine	76	32	53.4	1.11	
Wray	100	50	75.0	0.93	
Yuma	.....	.....	.....	0.73	
Connecticut.					
Bridgeport	88	48	68.9	4.66	
Canton	86	38	64.4	4.10	
Colchester	86[f]	42[f]	65.7[f]	4.10	
Falls Village	.....	.....	.....	3.79	
Hawleyville	87	42	67.2	5.96	
New London	85	48	67.9	5.12	
North Grosvenor Dale	89	42	66.6	4.03	
Norwalk	89	45	68.0	7.37	
Southington	87	42	66.8	4.75	
South Manchester	.....	.....	.....	5.14	
Storrs	86	43	66.0	2.63	
Voluntown	87	38	66.6	4.23	
Wallingford	.....	.....	.....	5.68	
Waterbury	90	41	68.6	5.65	
West Cornwall	86	44	64.2	4.71	
West Simsbury	.....	.....	.....	3.83	
Delaware.					
Milford	93	52	75.0	5.60	
Millsboro	93	51	73.8	12.83	
Newark	89	52	72.2	2.34	
Seaford	89	53	72.2	5.69	
District of Columbia.					
Distributing Reservoir[e][h]	88	61	74.6	8.24	
Receiving Reservoir[e][i]	89	57	74.7	5.70	
West Washington	97	52	76.8	10.77	
Florida.					
Apalachicola	92	68	81.2	10.43	
Archer	96	67	80.6	11.62	
Avon Park	93	70	81.3	12.72	
Bartow	95	70	82.1	14.62	
Bonifay	96	67	80.6	8.99	
Brooksville	96	66	80.4	17.47	
Carrabelle	92	66	80.3	11.13	
Caxambas	96	71	82.8	15.11	
Clermont	97	69	82.1	10.91	
De Funiak	96	65	79.0	6.35	
Eustis	93	69	81.1	14.10	
Federal Point	94	70	80.9	13.65	
Fernandina	95	69	80.9	15.89	
Fort Meade	96	68	81.2	17.90	
Fort Myers	91	70	80.9	10.52	
Fort Pierce	91	70	80.6	3.71	
Gainesville	94	68	81.2	14.90	
Grasmere	95	70	81.6	0.00	
Huntington	96	68	82.4	16.59	
Hypoluxo	92	70	81.4	6.16	
Inverness	93	68	80.6	10.56	
Jasper	95	69	80.6	7.78	
Kissimmee	92	69	80.4	13.90	
Lake City	96	68	80.9	7.76	
Macclenny	94	68	80.8	12.48	
Madison	99	69	81.9	6.52	
Malabar	93	70	81.6	9.88	
Manatee	94	70	80.6	13.21	
Marianna	98	66	80.8	7.94	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Florida—Cont'd.	°	°	°	*Ins.*	*Ins.*
Merritt Island	89	72	81.0	5.84	
Miami	93	71	82.5	13.71	
Middleburg	96	67	79.8	10.14	
Molino	102	59	81.1	7.23	
Monticello	96	66	80.4	7.49	
Mount Pleasant	96	65	80.0	3.68	
New Smyrna	97	67	81.6	5.52	
Nocatee	95	70	81.6	10.04	
Ocala	95	69	81.0	9.86	
Orange City	99	68	82.2	10.65	
Orange Home	94	68	80.6	12.82	
Orlando	93	68	80.4	17.13	
Plant City	94	67	80.1	13.48	
Rockwell	96[c]	68[c]	81.7[c]	22.49	
St. Andrews	93	65	80.7	8.42	
St. Augustine	94	70	81.1	13.00	
St. Leo	95	67	80.5	16.26	
Sand Key	94	71	83.2	3.33	
Stephensville	95[c]	69[c]	80.8[c]	19.47	
Sumner	94	66	80.3	24.76	
Switzerland	92[c]	69[c]	79.6[c]	14.59	
Tallahassee	90	66	79.0	6.31	
Tarpon Springs	94	68	79.6	16.80	
Titusville	94[c]	66[c]	80.6[c]	10.29	
Wausau	.....	64	.....	9.55	
Georgia.					
Abbeville	.....	.....	.....	4.35	
Adairsville	93[c]	63[c]	76.6[c]	4.86	
Albany	100	61	82.2	3.45	
Allapaha	98	67	80.8	1.90	
Americus	99	62	79.8	3.32	
Athens	95	59	75.5	6.82	
Bainbridge	99	64	82.4	7.29	
Blakely	100	62	81.1	4.94	
Bowersville	98	55	76.9	2.83	
Butler	.....	.....	.....	6.45	
Camak	96	60	77.3	4.78	
Canton	.....	.....	.....	4.59	
Carlton	.....	.....	.....	3.35	
Carrollton	95	58	76.5	3.96	
Clayton	89	54	72.7	7.92	
Columbus	98	67	81.4	4.87	
Cordele	101	65	79.8	5.83	
Covington	100	60	78.0	4.87	
Dahlonega	92	58	74.4	6.38	
Dawson	101[d]	62[d]	82.1[d]	2.15	
Diamond	89	52	73.2	13.00	
Dudley	102	64	81.2	3.78	
Eastman	102	62	82.2	3.55	
Eatonton	99	59	78.9	2.99	
Elberton	99	56	77.8	3.88	
Experiment	97	59	77.6	2.92	
Fitzgerald	100	65	81.2	2.18	
Fleming	99	64	79.4	4.84	
Forsyth	101	58	79.2	3.25	
Fort Gaines	95	66	79.9	2.26	
Gainesville	94	57	74.6	3.61	
Gillsville	96	59	76.2	5.60	
Glenville	99	66	80.1	3.42	
Greenbush	91	60	75.9	4.79	
Greensboro	101	59	78.8	6.87	
Griffin	99	59	78.4	2.30	
Harrison	100	61	78.8	5.30	
Hawkinsville	106	60	82.2	5.23	
Lost Mountain	96	60	75.6	6.93	
Louisville	98	63	80.0	3.97	
Marshallville	100	65	80.8	6.08	
Mauzy	97	62	80.2	3.13	
Milledgeville	99	63	80.0	2.93	
Millen	100	63	80.6	3.08	
Montezuma	.....	.....	.....	5.98	
Monticello	100	60	77.6	3.47	
Morgan	93	63	79.9	4.11	
Newnan	99	57	77.4	5.94	
Oakdale	.....	.....	.....	3.17	
Point Peter	101	57	77.8	2.57	
Poulan	97	66	79.5	6.43	
Putnam	102	64	80.9	1.86	
Quitman	94	66	79.8	5.93	
Ramsey	93	56	75.6	4.64	
Resaca	.....	.....	.....	4.41	
Rome	99	58	78.0	4.16	
St. Marys	98	69	81.0	7.09	
Screven	95	67[b]	80.5[f]	5.41	
Statesboro	101	65	80.4	7.04	
Talbotton	102	60	79.3	6.64	
Tallapoosa	96	62	76.6	5.08	
Thomasville	97	67	80.9	8.16	
Toccoa	93	55	73.3	8.08	
Valdosta	95	67	79.9	0.68	
Valona	94	67	79.8	6.32	
Vidalia	99	66	80.4	8.99	
Washington	98	62	77.1	3.66	
Waverly	96	65	80.9	6.35	
Waycross	97	66	80.8	6.05	
Waynesboro	96	64	77.8	4.94	
Westpoint	99	58	80.2	6.69	
Woodbury	99	58	77.4	7.27	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Idaho.	°	°	°	*Ins.*	*Ins.*
Albion	96[4]	40[4]	69.2[4]	0.05	
American Falls	99	40	70.6	0.44	
Blackfoot	98	38	69.0	1.38	
Burnside	100	30	70.3	0.39	
Caldwell	104	31	70.1	0.73	
Cambridge	107	37	73.0	T.	
Chesterfield	94	30	62.2	0.64	
Collins	.....	.....	.....	0.28	
Dewey	92	26	65.9	0.12	
Ellerslie	101	34	73.0	0.07	
Fernwood	98	42	70.4	1.04	
Forney	99	26	62.0	0.15	
Franklin	.....	.....	.....	0.49	
Garnet	110	49	79.6	T.	
Glens Ferry	112	40	78.9	T.	
Grangeville	96	37	68.0	0.08	
Hailey	95	38	67.2	0.17	
Hope	.....	.....	.....	0.16	
Idaho City	93	32	64.4	0.00	
Idaho Falls	95	39	68.5	0.91	
Kellogg	97	32	63.6	0.48	
Ketchum	.....	.....	.....	0.39	
Lakeview	93	39	64.8	0.45	
Landore	90	25	61.7	0.06	
Lardo	.....	.....	.....	0.00	
Lemhi Agency	93	30	64.2	1.52	
Lost River	92°	35°	65.6°	0.81	
Lovell	105[4]	35[4]	69.9[4]	0.18	
Malad	87	34	62.1	0.10	
Meadows	101	27	64.8	T.	
Milner	104	38	73.0	0.36	
Minidoka	103	46	73.7	0.14	
Mink Creek	92	38	64.0	0.01	
Moscow	99	36	68.1	0.19	
Murray	93	27	59.6	0.18	
Nevins Ranch	.....	.....	.....	0.50	
Oakley	97	40	70.4	0.30	
Ola	103	36	71.7	0.00	
Orofino	108	35	71.5	0.17	
Paris	86	37	63.2	0.88	
Pearl	.....	.....	.....	T.	
Payette	108	40	75.5	0.00	
Poplar	.....	.....	.....	0.23	
Porthill	92	38	64.9	0.12	
Priest River	96	32	66.8	0.11	
Roosevelt	84	31	58.8	0.41	
St. Maries	101	33	65.8	0.39	
Salem	.....	.....	.....	0.73	
Soldier	100	29	63.7	0.85	
Standrod	.....	.....	.....	0.30	
Vernon	94	32	66.5	0.58	
Weston	100	38	69.6	0.65	
Illinois.					
Albion	96	58	77.2	2.05	
Aledo	94	54	74.8	2.14	
Alexander	94	54	75.4	4.58	
Antioch	93	51	70.0	5.20	
Ashton	94	51	71.4	4.25	
Astoria	93	51	73.4	4.34	
Aurora	92	52	71.8	4.00	
Benton	96	54	78.3	2.35	
Bloomington	99	51°	76.8	2.96	
Bushnell	96	52	76.4	1.85	
Cambridge	96	54	75.8	4.03	
Carlinville	94	53	75.7	4.65	
Carrollton	95	52	76.6	5.95	
Charleston	94	53	76.2	1.53	
Chester	98	67	81.1	2.34	
Cisne	95	54	77.3	3.99	
Coatsburg	96	52	76.6	2.95	
Cobden	95	57	78.0	2.85	
Colchester	95	54	76.1	5.22	
Decatur	95	53	76.2	1.44	
Dixon	95	52	73.7	4.15	
Effingham	93	55	74.8	2.89	
Equality	98	57	79.3	3.78	
Flora	94	54	74.7	3.36	
Friendgrove	91	58	74.9	5.88	
Galva	97	52	74.0	2.58	
Grafton	.....	.....	.....	4.21	
Greenville	95	56	76.4	3.44	
Griggsville	97	56	77.6	4.67	
Havana	99	55	77.0	4.42	
Henry	95	53	74.1	4.20	
Hillsboro	96	53	77.0	2.53	
Hoopeston	92	57	73.6	3.75	
Joliet	95	56	73.6	4.29	
Kishwaukee	94	49	72.0	3.13	
Knoxville	95	48	72.1	4.37	
Lagrange	.....	.....	.....	2.65	
Laharpe	96[4]	57[4]	75.0[4]	5.55	
Lanark	94	47	72.1	7.90	
Loami	.....	.....	.....	5.11	
McLeansboro	95	58	77.0	3.30	
Martinton	99	52	74.7	4.91	
Mascoutah	96	53	75.0	1.77	
Mattoon	92	54	78.4	1.16	
Minonk	96	52	74.5	2.59	
Monmouth	97	49	75.9	2.04	
Morrison	92	52	72.4	3.64	
Morrisonville	95	54	75.8	1.78	
Mount Carmel	.....	.....	.....	3.54	
Mount Pulaski	95	53	76.3	1.41	
Mount Vernon	95	55	77.2	2.75	
New Burnside	95	52	76.9	3.00	
Olney	97	54	76.0	4.40	
Ottawa	98	54	74.0	4.12	
Palestine	95	55	75.8	2.94	
Pana	93	54	75.4	1.66	
Paris	92	56	75.4	3.43	
Peoria	95	56	75.7	2.31	
Philo	96	51	74.2	1.31	
Plumhill	91	57	75.0	5.03	
Pontiac	93	54	74.8	1.82	
Rantoul	96	53	74.6	2.60	
Raum	98	57	77.0	4.30	
Riley	91	50	71.2	5.85	
Robinson	91	54	74.4	5.10	
Rockford	94	54	73.2	3.75	
Rushville	94	53	75.6	3.02	
St. Charles	94	53	72.6	4.25	
St. John	95	55	77.6	1.86	
Shobonier	93	54	76.4	2.36	
Streator	96	51	73.2	2.15	
Sullivan	94	52	75.8	1.70	
Sycamore	95	51	72.3	6.52	
Tilden	93	55	75.5	3.20	
Tiskilwa	92	55	72.7	2.54	
Tuscola	96	53	74.4	2.85	
Urbana	94	54	74.7	2.14	
Walnut	96	52	74.0	4.88	
Warsaw	.....	.....	.....	2.59	
Winchester	94	55	76.5	4.57	
Windsor	95	52	75.0	1.34	
Winnebago	93	50	72.2	3.83	
Yorkville	94	51	72.8	2.91	
Zion	92	49	71.6	6.26	
Indiana.					
Anderson	90	54	72.7	8.37	
Angola	92	50	70.8	2.88	
Auburn	93[4]	49[4]	71.8[4]	2.91	
Bedford	92	57	75.0	6.75	
Bloomington	92	58	73.3	8.05	
Butlerville	92	54	74.4	9.28	
Cambridge City	92	52	72.6	5.07	
Columbus	94	53	75.4	3.44	
Connersville	95	52	73.7	5.93	
Crawfordsville	93	57	73.2	4.63	
Delphi	95	51	73.7	2.47	
Elkhart	95	56	73.0	4.49	
Farmersburg	93[4]	54[4]	75.0[4]	2.69	
Farmland	90	53	72.2	5.06	
Franklin	.....	.....	.....	5.06	
Greensburg	93	52	74.5	4.72	
Hammond	91	51	71.8	3.47	
Hector	100	54	77.4	6.73	
Holland	94[4]	53[4]	76.4[4]	79.1	
Huntington	92	54	72.4	4.25	
Jeffersonville	96	58	77.0	4.23	
Kokomo	94	51	73.8	7.63	
Lafayette	95	55	74.8	4.27	
Laporte	86	54	70.6	3.20	
Logansport	93	46	72.2	5.61	
Madison	98	55	77.1	5.48	
Marengo	94	51	75.1	8.68	
Marion	93	53	73.2	3.49	
Markle	93	51	72.2	4.40	
Mauzy	91	51	72.8	7.44	
Moores Hill	93	56	74.6	9.55	
Mount Vernon	99	65	79.8	2.14	
Northfield	93	50	71.4	4.74	
Paoli	94	56	75.4	7.58	
Princeton	95	57	77.2	12.85	
Rensselaer	92	50	72.8	3.00	
Richmond	91	51	72.6	5.34	
Rochester	.....	50	.....	5.01	
Rockville	91	54	73.9	3.33	
Rome	101	54	77.1	3.64	
Salem	98	53	77.4	3.71	
Scottsburg	95	56	76.3	4.31	
Seymour	93	56	74.4	8.42	
Shelbyville	93	54	74.0	5.18	
South Bend	92	52	72.4	4.96	
Syracuse	96	52	73.0	5.24	
Terre Haute	93	56	76.8	2.43	
Topeka	92	40	67.3	3.92	
Valparaiso	91	53	73.4	2.95	
Veedersburg	.....	.....	.....	3.30	
Vevay	92	54	74.5	5.65	
Vincennes	96	55	77.2	4.77	
Washington	95	56	75.6	6.69	
Worthington	94	54	75.8	4.30	
Indian Territory.					
Ardmore	104	62	83.3	0.87	
Calvin	.....	.....	.....	3.41	
Chickasha	110	56	85.1	0.89	
Durant	100	61	80.6	2.63	
Fairland	96°	58°	78.2°	6.58	
Fort Gibson	.....	.....	.....	1.02	
Goodwater	102	58	82.0	1.19	
Hartshorne	.....	.....	.....	3.32	
Healdton	102	54	80.8	0.87	
Holdenville	99	63	80.4	6.03	
Marlow	102	59	82.1	0.96	
Muskogee	96	60	79.3	2.22	
Okmulgee	96	58	78.8	5.13	
Ravia	101	62	81.6	0.65	
Roff	98	64	83.4	0.80	
South McAlester	98	62	81.4	3.84	
Tahlequah	.....	.....	.....	2.45	
Tulsa	99	62	81.4	4.77	
Vinita	96	55	78.2	5.27	
Wagoner	96	61	79.8	3.08	
Webbers Falls	101	58	80.0	2.00	
Iowa.					
Afton	94	54	75.1	4.67	
Albia	95	52	75.0	7.87	
Algona	94	52	73.1	4.89	
Allerton	97	54	75.5	6.62	
Alta	96	55	73.3	4.75	
Alton	94	52	73.5	3.65	
Amana	94	49	74.2	1.96	
Ames	95	52	75.4	3.03	
Atlantic	98	50	74.8	4.54	
Audubon	97	50	74.4	2.72	
Baxter	95	52	74.0	7.22	
Bedford	96	56	75.5	2.64	
Belleplaine	94	56	73.8	2.66	
Bonaparte	96	53	75.2	7.93	
Boone	96	55	74.8	6.45	
Britt	95	50	72.6	2.96	
Buckingham	.....	.....	.....	2.72	
Burlington	93	57	76.0	6.61	
Carroll	96	50	74.2	1.64	
Cedar Rapids	97	53	75.4	3.48	
Chariton	95	53	74.5	7.74	
Clarinda	100	57	76.2	2.97	
Clearlake	95	54	74.2	3.78	
Clinton	95	51	73.6	4.11	
College Springs	94	59	75.8	2.45	
Columbus Junction	94	52	75.2	3.36	
Corning	92	55	74.0	4.29	
Corydon	96	55	75.2	2.81	
Cresco	93	51	70.8	3.13	
Creston	93	58	74.2	5.43	
Cumberland	.....	.....	.....	3.73	
Decorah	94	49	71.8	3.07	
Delaware	95	49	71.8	5.53	
Denison	97	50	75.0	1.15	
Desoto	92	57	74.6	4.50	
Dows	93	49	71.9	4.83	
Earlham	94[4]	50[4]	73.0[4]	4.27	
Elkader	101	50	73.8	2.83	
Elliott	98	58	76.6	2.61	
Estherville	95	52	72.2	5.05	
Fayette	94	48	70.6	5.08	
Florence	.....	.....	.....	3.26	
Forest City	97	52	73.4	2.42	
Fort Dodge	97	55	74.4	7.63	
Fort Madison	.....	.....	.....	4.93	
Galva	93	49	72.2	3.79	
Gilman	.....	.....	.....	3.10	
Glenwood	94	59	75.5	3.15	
Grand Meadow	92	52	71.0	3.93	
Greene	98	51	73.6	5.01	
Greenfield	97	54	75.4	4.39	
Grinnell	95	52	74.2	5.74	
Grundy Center	94	50	73.2	2.81	
Guthrie Center	98	54	75.1	3.23	
Hampton	99	53	74.6	3.96	
Hancock	97	57	76.0	2.77	
Hanlontown	98	50	71.9	2.39	
Harlan	94	52	74.2	4.70	
Hopeville	97	56	75.8	3.25	
Humboldt	94	55	73.4	6.01	
Ida Grove	95	48	73.0	2.60	
Indianola	95	55	74.8	6.17	
Inwood	96	52	73.8	2.76	
Iowa City	96	51	74.4	2.62	
Iowa Falls	95	49	72.5	2.62	
Jefferson	98	54	75.6	1.96	
Keosauqua	98	50	75.8	3.92	
Knoxville	93	55	75.0	7.81	
Lacona	.....	.....	.....	6.71	
Larrabee	97	55	75.0	3.93	
Leclaire	.....	.....	.....	1.86	
Lemars	97	50	74.4	3.88	
Lenox	92	57	74.6	3.53	
Leon	94	55	75.8	4.60	
Little Sioux	98	51	77.2	1.30	
Logan	97	52	76.4	1.74	
Maple Valley	.....	.....	.....	2.96	
Maquoketa	97	46	72.2	3.32	
Marshalltown	103	50	74.8	3.21	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Iowa—Cont'd.	°	°	°	*Ins.*	*Ins.*
Mason City	96	55	73.8	5.00	
Massena	102	52	77.0	3.84	
Monticello	96	47	72.2	3.75	
Montezuma	.....	.....	.....	5.20	
Mountayr	97	56	75.8	4.87	
Mount Pleasant	95	52	73.4	6.10	
Mount Vernon	98	55	75.0	1.56	
Muscatine	.....	.....	.....	3.36	
Nevada	.....	.....	.....	2.01	
New Hampton	96	54	72.4	4.26	
Newton	93	54	73.7	5.10	
Northwood	96	50	72.4	2.97	
Odebolt	100	56	75.7	2.82	
Ogden	95	55	74.8	3.87	
Olin	94	48	73.2	3.28	
Onawa	98	53	77.5	2.03	
Osage	96	51	72.5	2.83	
Oskaloosa	94	53	75.0	3.80	
Ottumwa	99	57	77.2	6.86	
Pacific Junction	93	53	74.5	3.47	
Pella	96	54	75.9	4.87	
Perry	95	55	75.0	5.30	
Plover	95	52	74.9	8.47	
Pocahontas	98	55	74.2	5.87	
Redoak	94	50	77.0	3.96	
Ridgeway	97	53	74.0	3.62	
Rock Rapids	96	44	74.6	6.00	
Rockwell City	93	55	73.8	4.20	
Sac City	96	56	78.4	3.46	
St. Charles	95	56	75.6	4.04	
Sheldon	99	53	74.8	3.15	
Sibley	93	52	71.6	4.63	
Sidney	94	60	77.0	5.43	
Sigourney	96	53	75.6	3.94	
Sioux Center	94	52	73.2	2.76	
Stockport	93	54	74.6	5.44	
Storm Lake	95	55	73.0	2.67	
Thurman	93	58	75.6	7.60	
Tipton	98	57	75.6	4.75	
Toledo	95	49	73.7	3.00	
Vinton	93	46	73.6	1.05	
Wapello	93[c]	54[c]	73.6[c]	4.05	
Washington	93[b]	54[c]	74.4[c]	5.58	
Washta	99	45	73.8	2.23	
Waterloo	99	51	74.4	4.41	
Waukee	104	57	78.0	5.39	
Waverly	94	53	72.0	5.49	
Webster City	98	50	75.2	3.97	
Westbend	93	54	73.0	5.33	
Whitten	94	50	73.4	1.61	
Wilton Junction	94	48	74.0	3.53	
Winterset	93	55	74.4	3.84	
Woodburn	94	50	74.0	2.75	
Zearing	93	47	73.6	4.32	
Kansas.					
Abilene	.....	.....	.....	0.12	
Alton	106	55	78.5	0.64	
Anthony	.....	.....	.....	3.25	
Atchison	102	59	77.1	5.72	
Baker	98	50	76.9	2.93	
Burlington	101	57	78.8	2.76	
Chapman	101	61	79.0	0.29	
Clay Center	106	59	79.3	0.47	
Coffeyville	105	56	82.1	.....	
Colby	104	49	75.5	1.90	
Columbus	94	58	76.9	5.06	
Cottonwood Falls	106	57	82.4	0.51	
Cunningham	103[c]	60[c]	81.2[c]	1.06	
Dresden	104	54	77.0	1.56	
Eldorado	103	58	79.0	0.37	
Ellinwood	102	61	79.3	0.86	
Ellsworth	107	58	79.8	1.02	
Emporia	103	61	78.4	2.67	
Enterprise	102	60	78.0	0.14	
Eureka	.....	.....	.....	2.24	
Fall River	101	57	78.4	1.75	
Farnsworth	105	52	77.0	0.59	
Forsha	102	59	79.8	2.37	
Fort Leavenworth	98	63	79.2	4.36	
Fort Scott	100	59	78.4	5.62	
Frankfort	101	56	77.4	6.01	
Garden City	103	53	79.8	0.57	
Gove[e1]	103	60	77.2	0.73	
Grenola	104	53	78.1	1.47	
Harrison	100	50	76.2	2.84	
Horton	98	61	77.5	3.50	
Hoxie	104	51	76.2	0.95	
Hugoton	103	54	78.3	0.82	
Hutchinson	103	60	79.1	1.32	
Independence	107	60	82.2	0.93	
Iola	.....	.....	.....	2.92	
Jewell	.....	.....	.....	0.67	
La Crosse	107	59	79.8	0.35	
Lakin	103	55	79.2	0.27	
Larned	104	57	78.0	0.63	
Lebo	103	59	80.2	1.09	
Macksville	101	59	77.3	1.52	
McPherson	107	60	80.6	1.10	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Kansas—Cont'd.	°	°	°	*Ins.*	*Ins.*
Madison	102	55	78.6	2.13	
Manhattan[b]	107	60	79.7	1.50	
Manhattan[c]	104	58	79.0	1.30	
Marion	100	63	80.1	1.55	
Medicine Lodge	104	57	80.2	1.26	
Minneapolis	103	60	79.4	0.43	
Moran	99	58	78.8	2.76	
Mounthope	98	64	80.1	1.09	
Neosho Rapids	.....	.....	.....	0.58	
Ness City	107[b]	58[b]	82.2[b]	0.84	
Newton	105	61	81.0	1.14	
Norton	100	55	75.8	0.41	
Norwich	101	60	79.5	3.07	
Oberlin	.....	.....	.....	2.46	
Osborne	.....	.....	.....	0.55	
Oswego	96	59	77.8	4.07	
Ottawa	97	55	77.0	3.85	
Plainville	105[g]	60[g]	77.2[g]	0.70	
Pleasanton	95	59	77.6	6.74	
Republic	100	59	77.3	2.76	
Rome	103	60	80.8	2.44	
Russell	104	58	78.6	2.07	
Salina	105	59	80.9	0.04	
Sedan	104	59	80.8	1.55	
Toronto	102	54	78.2	2.40	
Ulysses	104[d]	56[d]	79.6[d]	0.83	
Valley Falls	96	56	75.7	2.46	
Viroqua	101	55	77.2	2.23	
Wakeeney	105	57	78.4	0.37	
Wakeeney (near)	.....	.....	.....	0.25	
Wallace	105	52	77.0	0.32	
Walnut	97	61[g]	79.1[d]	6.55	
Wamego[e1]	97	63	77.4	3.38	
Winfield	100	57	78.6	1.36	
Yates Center	99	59	79.2	2.44	
Kentucky.					
Alpha	91	51	74.5	5.49	
Anchorage	95	54	75.0	2.79	
Bardstown	96	55	77.2	3.06	
Beattyville	95	51	75.4	3.68	
Beaver Dam	97	50	76.8	2.01	
Berea	94	52	74.4	4.97	
Blandville	93	59	76.9	4.31	
Bowling Green	99	57	78.4	1.19	
Burnside	95	52	77.4	3.71	
Cadiz	99	55	78.7	2.97	
Calhoun	99	56	78.7	2.67	
Catlettsburg	91	55	74.1	7.46	
Earlington	95	45	76.9	1.98	
Edmonton	93	52	75.5	2.58	
Eubank	92	52	73.4	3.67	
Falmouth	.....	.....	.....	5.35	
Frankfort	94	56	74.8	5.20	
Franklin	93	57	77.6	1.31	
Greensburg	98	42	75.0	4.04	
High Bridge	97	55	76.6	3.57	
Hopkinsville	97	55	78.0	4.15	
Irvington	94	57	76.5	1.78	
Jackson	98	54	74.6	5.63	
Leitchfield	94	54	75.1	2.00	
Loretto	94	51	76.6	2.22	
Manchester	95[g]	52[g]	75.6[e]	4.84	
Marion	94	58	77.5	1.80	
Mayfield	95	59	76.6	6.40	
Maysville	95	52	75.3	4.66	
Middlesboro	92	43	72.1	4.02	
Mount Sterling	93	53	74.4	3.54	
Owensboro	93	60	76.8	2.91	
Owenton	95	54	74.8	4.38	
Paducah	99	62	80.0	2.10	
Richmond	95	55	75.2	6.09	
St. John	91	54	74.3	2.16	
Scott	93	55	74.8	4.96	
Shelby City	92	50	73.6	3.89	
Shelbyville	97	52	74.8	5.01	
Taylorsville	93	52	74.6	3.19	
West Liberty	93	54	74.0	6.31	
Williamsburg	91	54	75.1	5.19	
Williamstown	91	55	72.8	4.69	
Louisiana.					
Abbeville	98	68	82.7	6.18	
Alexandria	104	64	84.9	2.40	
Amite	98	66	82.5	7.77	
Baton Rouge	99	68	83.4	4.17	
Burnside	97	68	81.7	3.69	
Calhoun	98	61	81.0	3.11	
Cameron	94	69	83.7	3.15	
Caspania	99[b]	67[b]	83.2[b]	1.57	
Cheneyville	98	67	83.9	2.41	
Clinton	93	67	81.0	5.27	
Collinston	101	64	83.0	6.23	
Covington	96	68	82.1	5.71	
Donaldsonville	103	69	83.9	3.78	
Farmerville[d]	97	67	82.6	.....	
Franklin	98	70	83.0	8.59	
Georgetown	97	64	82.0	3.71	
Grand Coteau	97	67	82.9	4.12	
Hammond	95	68	81.4	5.75	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Louisiana—Cont'd.	°	°	°	*Ins.*	*Ins.*
Houma	94	69	81.2	10.52	
Jennings	96	68	83.2	3.87	
Lafayette	98	68	82.7	2.09	
Lake Charles	98	68	83.4	3.03	
Lakeside	96	69	82.9	3.13	
Lawrence	97	72	82.9	5.39	
Libertyhill	99	65	82.4	2.40	
Logansport	.....	.....	.....	2.36	
Melville	98	67	82.6	5.08	
Minden	98	64	82.0	7.94	
Monroe	101	65	84.3	3.06	
Morgan City	.....	.....	.....	6.31	
New Iberia	92	69	81.4	8.45	
Opelousas	98	66	83.0	5.11	
Plain Dealing	99	63	81.8	4.06	
Port Eads	92	72	82.8	10.81	
Rayne	97	68	83.4	4.64	
Reserve	99	71	81.8	7.55	
Robeline	97	69	81.8	1.30	
Ruston	101	62	82.8	3.65	
St. Joseph	100	67	84.4	.....	
Schriever	99	68	82.6	4.88	
Simmesport	.....	.....	.....	2.84	
Sugar Experiment Station	93	69	82.4	3.33	
Sugartown	96	68	82.8	5.08	
Venice	93	69	80.6	13.56	
Maine.					
Bar Harbor	84	40	62.7	2.56	
Chesuncook	.....	.....	.....	1.28	
Cornish	88	40	65.2	4.26	
Danforth	.....	.....	.....	0.53	
Debsconeag	91	41	64.8	1.10	
Fairfield	88	39	65.4	1.43	
Farmington	87	38	63.5	3.10	
Gardiner	89	40	65.6	2.03	
Grant Farm	.....	.....	.....	0.79	
Greenville	.....	.....	.....	1.43	
Houlton	86	33	61.8	0.12	
Lewiston	90	45	66.6	1.79	
Madison	87	40	63.5	2.23	
Mayfield	85	40	63.2	1.86	
Millinocket	89	35	63.9	2.08	
North Bridgton	88	42	66.0	2.53	
Oquossoc	86	36	60.2	2.49	
Orono	89	35	64.0	2.13	
Patten	92	32	63.2	0.06	
Rumford Falls	88	36	64.1	2.85	
The Forks	.....	.....	.....	1.86	
Thomaston	83	41	62.3[c]	2.37	
Vanburen	88	33	62.4	0.15	
Winslow	88	37	64.4	2.03	
Maryland.					
Annapolis	95	59	76.4	4.13	
Bachmans Valley	88	49	68.8	7.47	
Boettcherville	104	45	74.6	5.40	
Cambridge	95	55	76.0	5.60	
Cheltenham	89	51	72.6	3.92	
Chestertown	88	54	73.2	4.01	
Chewsville	90	45	71.2	4.23	
Clearspring	89	50	70.3	4.41	
Coleman	91	53	73.9	5.03	
Collegepark	100	48	74.0	7.86	
Colora	.....	.....	.....	4.15	
Cumberland	.....	.....	.....	3.64	
Darlington	88	51	70.8	4.14	
Deerpark	85	38	65.2	1.85	
Denton	.....	.....	.....	5.59	
Easton	88	52	72.9	3.97	
Fallston	89	50	73.6	4.38	
Frederick	92	49	73.2	3.28	
Grantsville	86	42	65.9	4.31	
Greatfalls	94	49	73.8	3.03	
Greenspring Furnace	92	45	71.9	4.27	
Hancock	95[f]	48[d]	74.0[d]	4.55	
Harney	.....	.....	.....	5.93	
Jewell	90	54	73.6	5.40	
Johns Hopkins Hospital	90	52	74.7	6.57	
Keedysville	93	47	73.6	5.57	
Laurel	92	50	74.1	8.37	
McDonogh	.....	48	.....	6.13	
New Market	89	49	72.0	4.37	
Oakland	85	39	65.6	4.47	
Pocomoke City	92	53	74.6	6.21	
Porto Bello	92	57	76.2	4.21	
Princess Anne	89	51	72.6	5.89	
Solomons	91	61	75.7	3.10	
Sudlersville	95	50	74.6	3.92	
Takoma Park	91	50	72.7	9.96	
Van Bibber	87	54	73.1	3.99	
Westernport	92	45	71.7	2.78	
Woodstock	90	48	72.8	4.62	
Massachusetts.					
Amherst	89	42	66.2	6.47	
Bedford	84	46	65.2	4.35	
Bluehill (summit)	88	46	66.5	3.64	
Cambridge	90	47	68.8	3.04	
Chestnuthill	92	46	68.4	3.84	
East Templeton[e1]	85	49	67.2	6.45	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Massachusetts—Cont'd.	°	°	°	*Ins.*	*Ins.*
Fall River	84	48	67.0	4.94	
Fitchburg	87	46	66.6	5.38	
Framingham	88	41	65.2	2.54	
Groton	86	41	65.2	5.05	
Hyannis				4.14	
Jefferson				3.61	
Lawrence	89	46	67.8	2.81	
Leominster				6.49	
Lowell	87	46	69.2	4.50	
Ludlow Center	83	38	61.5	5.24	
Middleboro	87	41	66.2	2.77	
Monson	85	42	65.3	4.92	
New Bedford	83	46	67.2	4.63	
Plymouth *	84	51	65.9	2.39	
Princeton				3.37	
Provincetown	84	51	68.2	2.77	
Salem				3.14	
Somerset *[1]	94	46	69.0	4.08	
Sterling				2.75	
Taunton	86	39	66.0	2.90	
Webster				4.48	
Westboro	89	41	67.4	2.98	
Weston	87	42	65.1	2.81	
Williamstown	83	42	63.9	4.55	
Winchendon				5.14	
Worcester	83	49	67.7	2.15	
Michigan.					
Adrian	95	48	71.4	3.19	
Agricultural College	90	50	69.6	3.92	
Allegan	96[c]	49[c]	72.1[c]	3.05	
Alma	92	45	68.4	4.35	
Ann Arbor	93	47	71.0	4.06	
Arbela	91	48	70.0	2.34	
Baldwin	90[d]	44[d]	68.0[d]	1.90	
Ball Mountain	89	49	68.0	4.15	
Baraga	90			0.75	
Battle Creek	92	52	71.4	3.08	
Bay City	95	47	70.2	1.90	
Benzonia	87	46	65.9	2.74	
Berlin	94	42	68.2	3.47	
Big Rapids	89	40	66.0	3.62	
Birmingham	89	48	68.9	2.81	
Bloomingdale	91	51	70.8	2.22	
Calumet	80	45	64.2	1.01	
Carsonville				4.02	
Cassopolis				2.60	
Charlevoix	90	52	68.5	1.27	
Charlotte	91	47	69.6	2.82	
Chatham	87	32	62.6	2.44	
Cheboygan	90	43	67.6	1.46	
Clinton	91	47	70.4	3.21	
Coldwater	93	49	70.9	8.03	
Concord	89	50	69.4	2.55	
Deer Park	84	42	63.6	2.40	
Detour	79	50	65.4	1.50	
Dundee	92	48	70.4	3.86	
Eagle Harbor	81	36	61.6	0.88	
East Tawas	89[d]	48[d]	67.0[d]	3.73	
Eloise	91	48	70.8	5.92	
Fennville	88	50	70.7	3.14	
Fitchburg	91	46	69.7	3.19	
Flint	90	46	68.4	3.46	
Gladwin	94	45	67.6	3.35	
Grand Haven	84	52	68.4	7.82	
Grand Marais	78	44	62.3	3.34	
Grape	92	46	70.0	2.53	
Grayling	91	42	66.6	1.60	
Hagar	90	46	69.9	1.53	
Harbor Beach	90	38	67.6	2.50	
Harrison	90	43	67.1	2.40	
Harrisville	93	45	67.2	1.99	
Hart	90	45	68.4	2.62	
Hastings	92	49	69.8	2.43	
Hayes	91	44	66.9	2.08	
Highland				2.36	
Hillsdale	91	48	70.6	2.73	
Holland	83	51	66.9	4.64	
Howell	88	49	69.0	4.75	
Humboldt	85	27	58.5		
Iron Mountain	90	40	65.6	1.31	
Iron River	87	36	63.0	3.60	
Ironwood	88	41	65.5	1.42	
Ivan	91	42	66.4	2.40	
Jackson	95	51	72.6	2.03	
Jeddo	92	47	69.4	5.26	
Kalamazoo	91[c]	54[c]	71.6[c]	2.35	
Lake City	92	41	66.0		
Lansing	90	50	70.2	2.80	
Lapeer	89	55	67.5		
Ludington	83	48	68.6	3.15	
Mackinac Island	84	52	69.0	3.40	
Mackinaw City	86	52	69.8	1.18	
Mancelona	92[d]	28	62.4	1.10	
Manistee [f]	85	50	69.8		
Marine City	87	43	67.8	2.42	
Menominee	90	43	68.0	1.88	
Midland	92	38	68.1	1.67	
Michigan—Cont'd.	°	°	°	*Ins.*	*Ins.*
Montague	87	47	69.0	5.32	
Muskegon	93	49	70.2	4.54	
Old Mission	90	50	67.4	3.53	
Olivet	86	52	69.4	3.67	
Onaway	87	40	63.4	1.40	
Ovid	90	48	68.7	2.06	
Owosso	87[b]	47[b]	68.2[b]	2.91	
Petoskey	88	48	67.0	1.30	
Plymouth	92	40		2.72	
Port Austin	89	40	66.4		
Powers	89	38	65.8		
Reed City	90	37	67.2	2.14	
Saginaw (W. S.)	93	49	69.6	1.83	
St. James	86[f]	54[f]	68.0[f]	1.12	
St. Johns	91	46	69.2	2.89	
St. Joseph	84	55	70.2	1.81	
Slocum	88	48	68.0	5.52	
Somerset				2.57	
South Haven	85	49	67.2	3.65	
Stanton	89	44	68.0	2.64	
Thomaston	89	32	62.5		
Thornville	88	52	69.2	4.54	
Traverse City	91	48	67.0	3.01	
Vassar	92	45	69.6	1.16	
Wasepi	90	49	69.5	3.54	
Webberville	90	46	67.4	3.68	
Whitefish Point	80	40	62.0	3.10	
Ypsilanti	89	48	68.6	4.89	
Minnesota.					
Albert Lea	98	53	72.9	4.67	
Alexandria	93	68	69.0	1.91	
Angus	91	43	66.4	6.76	
Ashby	89	50	69.0	2.41	
Beardsley	99	48	70.8	2.99	
Bemidji	93	41	68.4	2.64	
Bird Island	93	53	70.4	2.93	
Caledonia	90	50	68.9	3.77	
Campbell	94	45	68.5	1.14	
Collegeville	93	47	69.0	6.78	
Crookston	89	49	67.4	5.66	
Detroit	91	46	66.3	4.09	
Faribault	95	50	69.8	4.10	
Farmington	96	51	69.8	4.61	
Fergus Falls	92	54	71.4	1.99	
Glencoe				2.20	
Grand Meadow	95	50	71.0	3.13	
Hallock	91	41	65.8	5.31	
Halstad	92	44	67.6	5.07	
Hinckley	88	41	66.8	6.12	
Hovland	82	40	61.6	1.70	
Lake Winnibigoshish	86	48	65.8	2.66	
Leech	87	46	65.2	3.55	
Long Prairie	94	44	68.5	1.65	
Luverne	95	54	71.6	4.74	
Lynd	90	50	70.1	3.96	
Mankato				5.44	
Mapleplain	94	49	69.6	3.34	
Milaca		42	66.4[e]	4.69	
Milan	93	47	69.7	1.66	
Montevideo	95	50	70.8	1.48	
Mora	91	45	67.0	4.71	
Morris	92	48	67.6	1.46	
Mount Iron	87	36	64.0	4.23	
New London	99	48	70.0	3.53	
New Richland	97	51	72.6	7.05	
New Ulm	99	54	73.2	4.75	
Park Rapids	89	48	66.0	3.14	
Peterson				5.58	
Pine River	92	42	67.4	2.94	
Pipestone	93	55	70.8	5.08	
Pokegama Falls	88	43	65.8	3.45	
Pratt	95	51	70.2	4.01	
Redwing				7.40	
Reeds				8.24	
Rolling Green	92	50	72.2	2.28	
St. Cloud	93	45	70.0	6.96	
St. Peter	97	49	72.0	2.68	
Sandy Lake Dam	88	47	67.5	4.82	
Shakopee	97	63	70.8	6.30	
Stillwater				8.82	
Thief River Fall	85	46	65.8	3.42	
Tonka				4.81	
Wabasha	99	51	72.0	8.29	
Wadena	92	47	66.6	2.65	
Willow River	93	40	66.2	3.89	
Windom	96	52	72.6	4.76	
Winnebago	95	52	73.3	3.17	
Winona	92	54	70.0	5.75	
Worthington	95	48	69.9	4.27	
Zumbrota	95	48	69.2	4.25	
Mississippi.					
Aberdeen	101	60	80.2	8.16	
Agricultural College	95	62	80.7	6.46	
Austin	98	57	79.4	3.38	
Batesville	96	55	79.6	4.08	
Bay St. Louis	95	69	82.6	2.23	
Mississippi—Cont'd.	°	°	°	*Ins.*	*Ins.*
Biloxi	97	68	83.0	6.04	
Booneville	93	61	78.4	5.61	
Brookhaven	101	65	83.2	4.97	
Canton	97	63	80.7	5.10	
Columbia				4.30	
Columbus	99	61	80.8	5.30	
Corinth	92	59	77.4	7.54	
Crystal Springs	97	65	81.1	7.74	
Duck Hill	95	58	79.6	4.88	
Edwards	97	63	80.6	3.13	
Enterprise				8.06	
Fayette	94	62	80.3	1.61	
Fayette (near)				2.08	
Greenville	98	62	81.2	9.24	
Greenwood	96	61	80.3	5.81	
Hattiesburg		70		4.80	
Hazlehurst	98	64	81.1	7.69	
Hernando	98	59	79.8	3.75	
Holly Springs	100	59	80.2	4.32	
Indianola	94	63	79.8	4.72	
Jackson	97	65	81.2	4.98	
Kosciusko	99	61	81.1	4.37	
Lake	97	62	80.2	5.62	
Lake Como	99	62	82.0	7.42	
Laurel	100	65	82.2	7.44	
Leakesville	99	62	81.9	6.80	
Leland				5.73	
Louisville	93	63	79.3	5.95	
Macon	99	63	81.1	5.60	
McNeill	94	67	80.8	5.54	
Magnolia	102	65	83.0	8.49	
Merrill				8.45	
Natchez	99	68	83.6	0.88	
Nitta Yuma	98	66	82.1	6.15	
Okolona	100	62	82.0	2.65	
Patmos				4.79	
Pearlington	97	68	81.7	9.67	
Pecan	98			11.81	
Pittsboro	100	60	79.6	2.21	
Pontotoc	91	59	78.0	2.73	
Port Gibson	98	63	81.5	3.71	
Porterville	96	61	79.6	8.07	
Quitman	97	61	80.4	9.41	
Ripley	93	54	76.6	5.78	
Shelby				5.50	
Shoccoe	99	64	81.3	6.99	
Shubuta				4.41	
Stonington				2.89	
Suffolk	98	65	81.6	3.03	
Tchula	96	62	80.5	7.00	
Tupelo	96	59	80.2	3.62	
University	97	59	79.8	3.87	
Utica	96	65	80.8	2.30	
Walnutgrove	94[d]	63[d]	78.8[d]	4.67	
Walthall				3.14	
Watervalley	103	62	80.8	5.90	
Waynesboro	96	62	80.6	7.73	
Woodville	97	67	82.1	4.97	
Yazoo City	97	65	81.5	4.00	
Missouri.					
Albany				4.42	
Appleton City	97	60	77.9	5.86	
Arthur	95	59	77.3	7.15	
Avalon	97	54	76.4	2.54	
Bethany	93	55	74.2	4.28	
Birchtree	92	59	76.1	4.76	
Blue Springs	94[c]	56[d]	75.8[d]	5.04	
Boonville				4.84	
Bourbon	93	55	76.1	3.20	
Brunswick	96	58	76.0	4.43	
Caruthersville	97	59	78.8	3.48	
Conception	96	59	76.9	2.73	
Darksville	97	53	76.6	4.44	
Dean	96	54	76.9	5.19	
De Soto	94[c]	58[c]	75.6[c]	2.42	
Doniphan	93[c]	56[c]	76.5[c]	4.53	
Downing				2.58	
Eldorado Springs	95	57	76.8	4.74	
Fairport				4.11	
Fayette	94	54	74.2	7.15	
Fulton	98	52	77.2	3.00	
Gallatin *[1]	96	60	77.2	4.51	
Gano	93	57	75.9	3.52	
Glasgow	92	58	76.6	4.89	
Goodland	91	51	73.4	4.34	
Gorin				3.34	
Grant City	97	59	76.5	3.01	
Harrisonville	98	59	77.9	3.18	
Hazlehurst				2.24	
Hermann				5.00	
Houston	92[d]	52[d]	73.6[d]	5.60	
Huntsville	96	54	77.6	5.77	
Ironton	93	51	75.4	7.62	
Jackson	96	53	76.2	2.32	
Jefferson City	95	56	76.6	4.77	
Joplin	97	57	78.4	5.30	
Kidder	97	57	76.7	7.16	
Koshkonong	94	58	76.3	2.25	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Missouri—Cont'd.	°	°	°	*Ins.*	*Ins.*
Lamar	95	58	77.4	4.06	
Lamonte	.....	.....	.....	8.26	
Lebanon	91	60	75.2	4.17	
Lexington	97	59	78.0	4.41	
Liberty	93	59	76.6	5.07	
Lockwood	92	56	75.5	6.78	
Louisiana	96	48	76.0	3.82	
Macon	97	55	77.4	4.75	
Marblehill	95	55	76.4	4.21	
Marshall	95	57	76.6	7.05	
Maryville	96	59	76.4	3.34	
Mexico	95	53	76.8	4.33	
Monroe	94	53	75.5	6.78	
Montreal	93	55	75.2	8.09	
Mountaingrove	90	57	74.0	5.77	
Mount Vernon	95	55	76.0	5.30	
Neosho	93	52	76.0	9.32	
New Haven	96	58	78.0	4.28	
New Madrid	.....	.....	.....	2.31	
New Palestine	95	57	77.4	7.66	
Oakfield	93	57	76.8	4.25	
Olden	95	53	75.6	3.30	
Oregon	95	61	76.7	2.68	
Osceola	.....	.....	.....	6.30	
Pine Hill	.....	.....	.....	2.35	
Princeton	99	57	78.8	4.14	
Protem	95	53	76.8	3.82	
Rockport	.....	.....	.....	4.83	
Rolla	.....	.....	.....	3.76	
St. Charles	94	55	77.2	5.45	
St. Joseph	.....	.....	.....	2.13	
Sarcoxie	.....	.....	.....	4.74	
Sedalia	94	59	76.9	7.74	
Seymour	92	56	74.1	5.51	
Sikeston	95	55	75.7	3.61	
Steffenville	95	54	76.0	1.35	
Sublett	94	51	75.6	4.67	
Trenton	94	59	76.4	3.27	
Unionville	96	59	75.8	3.46	
Versailles	98	55	76.9	4.23	
Vichy	95	55	76.0	6.45	
Warrensburg	97	60	78.0	6.13	
Warrenton	95	54	77.1	5.05	
Warsaw	94	54	74.6	6..8	
Wheatland	.....	.....	.....	6.39	
Willowsprings	92	51	73.7	5.32	
Zeltonia	94	54	76.8	3.14	
Montana.					
Absarokee	.....	.....	.....	0.22	
Adel	91	33	66.6	2.20	
Alzada	.....	.....	.....	2.66	
Augusta	89[e]	31	62.9[e]	1.44	
Billings	104	45	73.4	0.25	
Boulder	88	34	62.8	0.88	
Bozeman	91	34	64.3	1.21	
Butte	87	37	64.0	1.00	
Canyon Ferry	92	40	68.4	0.54	
Cascade	96	40	70.2	2.05	
Chinook	99[1]	42[1]	70.1[1]	0.41	
Choteau	93[e]	35[e]	65.6[e]	0.70	
Clearcreek	92	42	67.8	0.25	
Columbia Falls	96[e]	29[e]	63.8[e]	0.12	
Copper	.....	.....	.....	0.39	
Crow Agency	100	40	71.2	0.00	
Culbertson	102	38	69.6	0.90	
Dayton	95	49	71.0	0.16	
Decker	101	35	69.3	0.25	
Deerlodge	.....	.....	.....	0.02	
Dillon	90	34	63.8	2.77	
Ekalaka	100	41	71.7	0.41	
Fallon	102	43	72.4	0.00	
Forsyth	100[1]	45	73.6[e]	T.	
Fort Benton	96	42	70.6	0.95	
Fort Harrison	97	40	67.8	.....	
Fort Logan	88	25	60.6	0.00	
Glasgow	98	38	69.9	0.18	
Glendive	.....	.....	.....	0.33	
Gold Butte	.....	.....	.....	0.31	
Graham	103	41	70.9	1.86	
Grayling	85	25	55.0	0.66	
Greatfalls	93	42	70.2	0.82	
Hamilton	89	40	65.8	0.27	
Hayden (near)	97	38	66.0	0.03	
Highwood	.....	.....	.....	0.55	
Homepark	.....	.....	.....	1.36	
Jordan	98	32	70.4	0.00	
Lakeview	.....	.....	.....	2.00	
Lame Deer	100	47	73.3	0.50	
Lowistown	96	32	67.0	0.80	
Livingston	93	37[e]	68.0[e]	1.22	
Malta[2]	99	40	71.2	.....	
Marysville	91	36	66.3	1.02	
Missoula	95	36	66.9	0.57	
Neihart	.....	.....	.....	0.18	
Nye	.....	.....	.....	1.00	
Ovando	93	26	62.0	0.32	
Parrot	94	39	67.2	0.67	
Philipsburg	90	31	61.9	0.20	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Montana—Cont'd.	°	°	°	*Ins.*	*Ins.*
Plains	96	39	67.4	T.	
Poplar	102	41	71.9	0.95	
Raymond	.....	.....	.....	0.00	
Redlodge	88	39	64.2	0.99	
St. Pauls	103	46	76.4	0.03	
St. Peter	89	43	67.6	0.51	
Saltese	.....	.....	.....	0.33	
Springbrook	102	42	71.1	0.89	
Steele	95	45	71.4	0.24	
Toston	95	49	71.7	0.76	
Townsend	.....	.....	.....	0.50	
Troy	96	35	64.2	0.19	
Utica	95	35	68.2	0.27	
Virginia City	88	36	63.6	1.10	
Warrick	.....	.....	.....	0.58	
Whitlash	.....	.....	.....	0.52	
Wolf Creek	95	37	65.5	0.61	
Wolf Point	.....	.....	.....	1.45	
Wolsey	88	24	58.8	0.80	
Yale	95	41	68.2	0.42	
Nebraska.					
Agate	94	37	67.6	2.71	
Albion	92	52	73.1	1.74	
Alma	99	54	75.2	2.74	
Arapaho	.....	.....	.....	1.94	
Arcadia	.....	.....	.....	1.48	
Ashland	97	58	77.0	5.54	
Ashton	.....	.....	.....	7.45	
Auburn	97	59	76.2	5.83	
Aurora	.....	.....	.....	3.56	
Bartley	98	53	74.8	3.97	
Beatrice	96	60	78.2	5.00	
Beaver	97	60	76.0	2.89	
Bellevue	95	58	75.8	3.46	
Blair	96	54	76.0	.....	
Bluehill	.....	.....	.....	3.03	
Bradshaw	.....	.....	.....	5.44	
Bridgeport	98	45	70.7	1.65	
Broken Bow	96	54	73.4	0.94	
Burchard	.....	.....	.....	5.76	
Burge	.....	.....	.....	1.73	
Burwell	.....	.....	.....	0.17	
Central City	.....	.....	.....	6.29	
Chester	.....	.....	.....	2.54	
Clearwater	98	53	74.3	2.95	
Cody	.....	.....	.....	0.80	
Columbus	95	57	75.3	2.84	
Crawford	.....	.....	.....	3.48	
Crete	97	61	76.7	4.99	
Curtis	93	54	72.6	1.75	
David City	90	59	74.0	4.86	
Dawson	100	60	80.4	3.51	
Duff	.....	.....	.....	1.50	
Dunning	.....	.....	.....	1.50	
Edgar	.....	.....	.....	4.40	
Ericson	.....	.....	.....	0.20	
Ewing	.....	.....	.....	1.31	
Fairbury	100	56	76.8	4.07	
Fairmont	94	58	75.2	4.31	
Fort Robinson	100	43	70.0	2.23	
Franklin	101	54	75.4	1.78	
Fremont	98	54	76.0	3.45	
Fullerton	.....	.....	.....	3.60	
Geneva	98	59	77.4	2.67	
Genoa (near)	93[e]	57[e]	76.2[e]	1.15	
Gering	102[1]	50[1]	73.2[1]	1.62	
Gordon	.....	.....	.....	0.50	
Gothenburg	99	53	75.0	2.54	
Grand Island	95	58	76.7	3.66	
Grant	99	50	74.0	3.49	
Greeley	.....	.....	.....	0.55	
Guide Rock	.....	.....	.....	3.32	
Halsey	103	52	74.8	0.89	
Hartington	94	52	73.2	3.07	
Harvard	92	57	74.0	2.29	
Hastings[e1]	94	64	76.6	1.92	
Hayes Center	98	54	74.9	2.50	
Hay Springs	97	43	70.2	1.78	
Hebron	97	59	76.6	2.56	
Hendley	.....	.....	.....	4.11	
Hickman	.....	.....	.....	5.35	
Holbrook	.....	.....	.....	1.91	
Holdrege	96	55	76.0	2.26	
Hooper[e1]	98	60	75.9	2.59	
Imperial	96	52	72.6	2.52	
Johnstown	.....	.....	.....	1.54	
Kearney	99	57	75.8	2.29	
Kennedy	95	50	72.8	2.11	
Kimball	94	46	68.8	2.38	
Kirkwood	103	51	75.0	1.93	
Leavitt	102	52	77.8	2.53	
Level	.....	.....	.....	3.00	
Lexington	95	56	73.7	4.59	
Lodgepole	92	48	69.4	1.90	
Loup	92	57	74.0	8.47	
Lynch	104	50	75.1	2.06	
McCook	.....	.....	.....	1.40	
McCool	.....	.....	.....	4.79	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Nebraska—Cont'd.	°	°	°	*Ins.*	*Ins.*
Madison	94	55	74.4	2.38	
Marquette	.....	.....	.....	6.32	
Merriman	.....	.....	.....	2.52	
Minden	96	55	74.4	2.72	
Monroe	.....	.....	.....	2.01	
Nebraska City	93	61	77.0	7.57	
Nemaha	.....	.....	.....	4.44	
Norfolk	97	54	75.2	3.28	
North Loup	94	54	73.7	2.10	
Oakdale	95	53	74.0	2.20	
Oakland	97	52	75.0	2.41	
Odell	.....	.....	.....	5.40	
Ord	.....	.....	.....	2.51	
Osceola	.....	.....	.....	5.55	
Palmer	.....	.....	.....	4.95	
Palmyra[e1]	95	58	75.7	8.85	
Pawnee City	99	56	76.4	4.53	
Plymouth	98	59	76.6	4.40	
Purdum	104	51	74.6	0.74	
Ravenna	94	56	73.6	4.65	
Redcloud	98[e]	61[e]	77.2[e]	2.08	
Republican	.....	.....	.....	3.70	
Rulo	.....	.....	.....	2.73	
St. Libory	.....	.....	.....	3.51	
St. Paul	94	59	75.6	3.49	
Santee	100	52	75.5	4.70	
Schuyler	.....	.....	.....	4.49	
Seneca	.....	.....	.....	0.04	
Seward	96	60	75.9	6.79	
Smithfield	.....	.....	.....	4.20	
Springview	101	53	73.9	1.37	
Stanton	97	58	76.1	2.86	
Strang	.....	.....	.....	2.62	
Stratton	.....	.....	.....	2.24	
Stromsburg	.....	.....	.....	6.76	
Superior	100	55	77.4	1.94	
Syracuse	.....	.....	.....	6.30	
Tablerock	.....	.....	.....	2.08	
Tecumseh	99	59	77.2	2.24	
Tekamah	98	55	76.6	2.45	
Turlington	94	59	76.0	6.11	
University Farm	97	56	76.9	6.24	
Wahoo	.....	.....	.....	3.68	
Wakefield	96	52	73.8	6.74	
Wallace	.....	.....	.....	2.05	
Wauneta	.....	.....	.....	2.54	
Weeping Water	.....	.....	.....	6.96	
Westpoint	100	55	76.2	4.06	
Whitman	.....	.....	.....	2.36	
Wilber	.....	.....	.....	4.10	
Wilsonville	.....	.....	.....	1.75	
Winnebago	95	47	72.8	2.28	
Wisner	.....	.....	.....	5.01	
Wymore	.....	.....	.....	2.23	
York	96	57	76.6	4.74	
Nevada.					
Amos	104	31	69.7	0.01	
Battle Mountain	108	40	74.4	0.15	
Belmont	91	44	69.1	T.	
Beowawe[e1]	105	48	74.6	T.	
Dyer	96	35	68.4	0.92	
Elko[e]	95	46	64.8	0.20	
Eureka	87	56	71.6	0.95	
Fenelon	.....	.....	.....	0.25	
Geyser	96	34	65.6	0.50	
Golconda	.....	.....	.....	0.00	
Halleck	.....	.....	.....	0.50	
Hawthorne	101	53	77.4	0.00	
Hazen	102	49	78.4	T.	
Humboldt	99	48	73.9	T.	
Lewers Ranch	95	45	69.4	0.33	
Lovelocks	104	40	73.1	0.00	
Martins	108	39	72.4	0.25	
Mill City[e1]	103	54	70.8	0.50	
Morey	93	46	69.7	0.08	
Palisade	96	42	68.5	0.25	
Palmetto	94	37	65.3	0.94	
Pioche	104	39	70.6	0.67	
Potts	96	32	65.0	T.	
Reno State University	96	46	69.3	0.32	
San Jacinto	99	33	67.6	0.18	
Sodaville	105	50	76.5	0.00	
Verdi	95	50	71.8	.....	
Wabuska	98	42	70.1	T.	
Wadsworth	102	50	79.6	0.00	
Wells[e1]	96	41	66.0	0.00	
Wood	92	38	66.8	1.39	
New Hampshire.					
Alstead	84	41	63.6	4.89	
Bartlett	.....	.....	.....	5.34	
Brookline[e1]	86	40	64.2	5.22	
Durham	88	37	64.4	2.35	
Franklin Falls	90	40	65.4	3.72	
Grafton	89	37	62.6	4.07	
Hanover	90	40	64.8	4.05	
Keene	87	40	65.2	5.01	
Littleton	85	36	63.0	7.31	
Nashua	89	43	68.0	4.19	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
New Hampshire—Cont'd.	°	°	°	*Ins.*	*Ins.*
Newton	87	38	64.3	2.95	
North Woodstock				4.92	
Plymouth	91	41	64.8	4.80	
Stratford	92	38	62.8	5.60	
New Jersey.					
Asbury Park	89	53	71.2	3.81	
Bayonne	91	52	72.0	5.60	
Belvidere	90	48	70.0	3.62	
Bergen Point	90	52	71.2	4.84	
Beverly	90	51	72.4	7.63	
Bridgeton	95	50	74.6	5.72	
Browns Mills	93	44	70.9	4.20	
Canton				5.11	
Cape May C. H	88[a]	52	73.3[a]	8.31	
Charlotteburg	88	38	66.0	3.67	
College Farm	90	49	70.9	4.96	
Dover	90	44	67.6	3.95	
Englewood	88	47	68.6	5.28	
Flemington	91	49	71.3	8.67	
Friesburg	93	49	72.2	4.58	
Hightstown	90	47	69.2	4.33	
Imlaystown	90	51	72.4	4.45	
Indian Mills	95	48	72.8	8.02	
Lakewood	89	49	70.2	3.85	
Lambertville	90	49	72.2	8.07	
Layton	88	43	66.7	6.63	
Moorestown	90	50	71.6	5.66	
Newark	91	51	71.0	5.14	
New Brunswick	92	50	73.3	5.15	
Oceanic	88	55	71.0	5.24	
Paterson	92	51	71.8	4.81	
Phillipsburg	94	49	71.4	4.79	
Plainfield	90	49	71.1	7.63	
Pleasantville				7.20	
Rancocas				4.36	
Rivervale	89	44	68.0	4.74	
Salem	93	49	72.2	3.62	
Sandy Hook	89	57	72.2	4.78	
Somerville	91	49	71.0	9.37	
South Orange	87	50	69.5	6.02	
Sussex	88	41	68.6	4.11	
Toms River	92	42	71.6	3.51	
Trenton	90	55	73.4	4.73	
Tuckerton	91	50	70.9	9.88	
Vineland	95	48	72.4	5.55	
Woodbine	92	50	72.4	5.20	
New Mexico.					
Alamagordo	99	60	79.1	0.41	
Albert	103	58	78.0	0.88	
Albuquerque	99	55	76.6	0.72	
Alma	98	45	73.4	2.80	
Alto				2.65	
Arabela	91	51	70.4	2.70	
Artesia	96	58	76.6	0.29	
Bellranch	100	56	77.2	1.44	
Bloomfield	97	47	75.2[a]	0.08	
Brice	98	62	79.1	1.30	
Cambray				0.50	
Carlsbad	104	58	80.0	1.83	
Chama				1.45	
Cimarron	91	44	66.4	1.51	
Cliff	100	50	77.0	2.45	
Cloud Croft	78	36	58.6	2.87	
Colmor				2.28	
Deming	98	52	77.0	1.25	
Dorsey	95	45	69.4	2.49	
Eagle Rock Ranch	88	44	66.8	0.84	
Elizabethtown	80	34	57.8	1.96	
Elk	90	53	69.8	3.08	
Espanola				1.01	
Estancia	92	46	67.6	1.07	
Fort Bayard	92	52	72.0	2.33	
Fort Stanton	90	47	67.1	2.12	
Fort Union	96	45	67.8	1.62	
Fort Wingate	89	45	68.4	1.00	
Fruitland	97	47	73.0	1.09	
Gage				2.25	
Gallinas Spring	103	50	77.2		
Gran Quivira				1.83	
Hillsboro	96	58	75.5	0.80	
Laguna	96	45	73.4	0.25	
Lagunita	97	53	74.2	0.99	
Lake Valley				2.37	
Las Vegas	94	46	69.2	1.34	
Lordsburg	99	59	80.2	0.92	
Los Alamos				0.90	
Los Lunas	98	54	77.3	0.80	
Luna	93	41	65.0	0.96	
Magdalina				4.05	
Manuelito				0.30	
Mesilla Park	100	58	79.0	1.48	
Mimbres				2.46	
Mineral Hill				1.04	
Mountain Air	95	40	67.4	1.60	
Portales	99	57	76.9	2.33	
Raton	95	45	68.4	1.45	
Redrock				2.65	
Rincon	101	59	79.2	0.84	
New Mexico—Cont'd.	°	°	°	*Ins.*	*Ins.*
Rociada	87	39	61.8	1.82	
Rosa				0.70	
Rosedale				1.70	
Salado				0.40	
San Marcial	104	55	79.4		
San Rafael	97	45	72.2	2.12	
Socorro	97	54	76.1	1.32	
Springer	98	40	70.1	0.02	
Strauss				0.74	
Taos	94	45	69.0	0.68	
Trampas				1.93	
Tres Piedras	93	40	63.4	0.60	
Tucumcari	98	59	78.4[d]	1.01	
Valley				2.48	
Vermejo	87	42	62.5	2.79	
Weed				1.90	
Whiteoaks				1.85	
Winsors	84[d]	34[d]	59.0[d]	1.16	
New York.					
Adams				6.53	
Addison	92	42	68.8	1.81	
Akron				1.84	
Angelica	80	38	63.2	2.77	
Appleton	92	45	67.4	1.99	
Arcade	86[a]	34[a]	64.0[a]	2.33	
Athens	89	46	68.8	4.50	
Atlanta	90	38	65.8	2.45	
Atwater				4.41	
Auburn	90	47	68.4	5.53	
Avon	90	45	67.3	3.20	
Baldwinsville	90	48	67.6	6.68	
Ballston Lake	87	41	65.6	5.58	
Bedford	90	45	69.4	7.17	
Berlin	87	40	65.8	3.82	
Blue Mountain Lake				5.08	
Bolivar	88	34	65.6	2.62	
Bouckville	85	41	63.6	6.37	
Brockport	92	49	68.6	2.94	
Cape Vincent	82	49	65.8	5.15	
Carmel	88	48	67.2	6.38	
Carvers Falls	87	42	65.3	2.20	
Chatham	91	43	68.4	5.33	
Chazy	85	42	65.8	2.43	
Coeymans	94	45	69.5	5.09	
Cold Spring Harbor	88	47	69.6	6.06	
Cooperstown	81	43	63.5	4.91	
Cortland	87	42	67.8	4.34	
Cutchogue	88	49	69.2	5.17	
Dekalb	86[e]	43[e]	65.9[e]	2.72	
De Ruyter	84	40	64.4	5.53	
Easton				3.83	
Elba	89	46	67.0	2.25	
Elmira	91	45	70.6	3.09	
Faust	85	40	62.8	5.41	
Fayetteville	91	47	68.8	7.10	
Fort Plain	91	47	68.8	5.06	
Franklinville	87	36	64.4	4.09	
Gabriels	83	31	59.0	3.00	
Gansevoort				3.36	
Glens Falls	87	43	65.8	3.02	
Gloversville	88	39	64.2	4.68	
Greenfield	86	42	65.0	3.49	
Greenwich	85	42	65.8	2.98	
Griffin Corners	82	36	61.6	5.17	
Harkness	88	43	64.6	3.39	
Haskinville				2.92	
Hemlock	87	48	68.0	1.74	
Hunt	88	39	65.8	2.13	
Indian Lake	86	33	62.5	2.40	
Ithaca	86	45	67.1	2.83	
Jamestown	89	43	68.0	4.15	
Jeffersonville	86	39	65.0	4.42	
Keene Valley	88	36	62.3	5.31	
Lake George	84	44	64.6	3.82	
Le Roy	89	46	67.0	2.24	
Liberty	83	46	64.6	4.46	
Littlefalls, City Res	87	46	65.6	5.13	
Lockport	87	47	67.3	2.64	
Lowville	85	40	63.7	3.93	
Lyndonville				2.33	
Lyons	94	48	69.4	5.46	
Middletown	86	48	67.8	4.18	
Mohonk Lake	82	46	65.4	4.32	
Moira	88	42	65.1	3.50	
Mount Hope	90	46	68.8	7.98	
Newark Valley				4.06	
New Lisbon	82	37	62.2	5.12	
North Hammond				3.11	
North Lake	83	32	57.1	4.67	
Number Four	80	41	61.5	6.23	
Ogdensburg	83	49	66.8	4.54	
Oneonta	92	43	69.5	4.48	
Oswegatchie				2.06	
Otto	84	49	68.4	2.34	
Oxford	83	45	65.5	4.41	
Perry City	87	39	65.7	3.38	
Plattsburg	91	41	67.4	5.07	
Port Jervis	88	46	68.2	6.39	
New York—Cont'd.	°	°	°	*Ins.*	*Ins.*
Potsdam	86	43	65.8	3.58	
Richland	93	42	69.4	3.65	
Richmondville	85	42	65.6	4.54	
Ridgeway	89	47	67.8	2.77	
Ripley	90	49	69.7	7.25	
Romulus	91	46	68.4	4.00	
Salisbury Mills	85	42	65.6	6.94	
Saranac	84	37	61.8	6.15	
Scarsdale	87	46	68.2	4.16	
Setauket	86	50	68.9	3.75	
Shortsville	88	46	67.1	2.88	
Skaneateles				7.65	
Southampton	84	49	68.2	5.97	
South Canisteo	88	39	65.5	2.24	
South Kortright	84	39	63.8	5.14	
South Schroon	84	40	62.9	2.90	
Spier Falls	87	44	65.0	2.98	
Ticonderoga	89	48	69.2	1.32	
Volusia	85	47	66.4	5.35	
Wappinger Falls	87	50	67.8	5.02	
Warwick				4.48	
Watertown	88	45	66.5	4.53	
Waverly	88	43	67.6	2.33	
Wedgwood	85	47	66.0	2.57	
Wells	87	38	63.2	3.64	
West Berne	90	41	65.9	4.66	
Westfield	86[d]	50[d]	67.2[d]	6.17	
Windham	86	40	64.0	5.79	
Youngstown				1.93	
North Carolina.					
Battleboro				4.70	
Beaufort	89	63	78.8	4.34	
Brevard	90	45	72.6	6.81	
Brewers	93	48	70.2	9.90	
Bryson				6.73	
Catawba				7.23	
Chapelhill	100	56	78.4	8.36	
Currituck				4.18	
Eagletown *5	93	54	74.2	3.66	
Edenton	90	50	73.8	5.80	
Fayetteville	98	55	76.5	6.63	
Goldsboro	98	55	76.5	9.02	
Graham				6.17	
Greensboro	94	55	75.2	8.25	
Greenville				2.51	
Henderson	95	53	75.6	12.72	
Hendersonville	88	44	69.0	11.31	
Henrietta	95[d]	50[d]	76.1[d]	7.30	
Horse Cove	84	50	68.8	14.36	
Hot Springs	89	56	72.8		
Jefferson	84	44	67.0	4.71	
Kinston	99	53	77.2	4.22	
Lenoir	93	54	73.6	3.34	
Lexington	96	49	74.8	9.36	
Lincolnton	95	50	76.4	3.29	
Linville	82	37	63.7	9.70	
Louisburg	95	52	75.6	6.77	
Lumberton	101	53	77.5	4.31	
Manteo	94	51	77.4	2.46	
Marshall	94	59	72.8	7.02	
Moncure	97	50	76.3	6.91	
Monroe	96	44	74.4	11.01	
Morganton	94	48	72.9	5.32	
Mountairy	93	47	73.0	5.97	
Mount Holly				8.46	
Murphy				5.02	
Nashville	98	50	76.3	4.52	
Newbern	97	54	77.8	2.47	
Patterson *1	87	46	67.0	5.39	
Pinehurst	101	52	77.2	9.94	
Pink Beds	84	41	65.6	6.51	
Pittsboro	99	50	75.6	7.62	
Randleman				7.21	
Reidsville	93	51	75.0	5.42	
Salem	94	49	74.2	6.65	
Salisbury	96	45	75.0[d]	7.68	
Saxon	95	54	73.1	7.06	
Scotland Neck	96	54	76.7	3.78	
Selma	101	56	76.8[f]	7.80	
Settle	90	50	72.9	7.04	
Sloan	98	51	76.4	3.05	
Snowhill	98	50	76.8	5.32	
Southern Pines	100	50	76.8	13.96	
Southport	92[d]	61[d]	79.0[d]	4.20	
Statesville	95	49	73.2	8.75	
Tarboro	100	58	79.4	4.66	
Vade Mecum	92	46	73.2	7.90	
Washington	98	52	77.0	4.39	
Waynesville	87	47	68.0	5.83	
Weldon	100	52	77.4	6.02	
Whiteville	95	52	76.6	2.17	
North Dakota.					
Amenia	94	45	69.1	5.30	
Ashley	93	39	66.2	3.11	
Berlin	98	39	66.3	2.09	
Bottineau	90	42	66.9	3.05	
Buford	101	41	70.8	0.80	
Cando	90	38	65.0	1.97	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
North Dakota—Cont'd.	°	°	°	*Ins.*	*Ins.*
Churchs Ferry	95	40	66.7	2.00	
Chilcot				0.77	
Coalharbor	101	44	69.8	1.02	
Cooperstown	94	42	66.2	4.58	
Denhoff	101[d]	44[d]	69.7[d]	1.71	
Dickinson	107	43	73.1	1.48	
Donnybrook	97	41	67.1	4.07	
Dunseith	90	44	65.5	2.16	
Edgeley	97	42	68.4	1.71	
Fargo	93	44	68.0	6.82	
Forman	93	46	69.0	6.45	
Fort Berthold	102	38	69.4	1.30	
Fort Yates	104	46	69.6	1.66	
Fullerton	96	43	67.6	1.25	
Glenullin	102	45	69.2	1.79	
Hamilton	92	41	66.2	3.75	
Hannah	90	38	64.8	1.36	
Jamestown	101	43	65.2	2.87	
Kulm	95	45	68.2	2.31	
LaFollette	94	39	65.4	1.97	
Lamoure				1.44	
Langdon	85	45	65.2	2.68	
Larimore	95	47	66.7	3.40	
Lisbon	93	45	67.4	2.85	
McKinney	94	34	64.8	1.80	
Manfred	100	41	67.1	2.69	
Mayville	95	43	67.7	4.07	
Medina	95	38	66.5	1.81	
Medora	102	40	70.5	2.04	
Melville	102[d]	42[d]	69.4[d]	3.25	
Milton	92	40	62.3	1.16	
Minnewaukon	94[e]	23[e]	68.0[e]	2.69	
Minot	94	43	66.6	2.76	
Minto	89	43	64.8	6.37	
Moyersville	98	40	66.6	2.01	
Napoleon	100	40	67.2	2.68	
New England	100	40	71.4	2.10	
Oakdale	98	44	70.8	1.06	
Oriska	95	44	67.9	1.94	
Park River	93	45	67.2	4.52	
Pembina	90	42	65.6	2.33	
Portal	94	40	68.0	1.08	
Power	92	47	68.2	6.13	
Pratt	92	39	65.5	3.35	
Rolla	90	43	66.4	1.87	
Rugby	91	40	65.4	1.25	
Sentinel Butte	94	54	73.0		
Steele	97[e]	41[d]	68.2[e]	2.50	
Tioga	99[e]	36[d]	68.1[e]	0.84	
University	94	45	67.2	4.54	
Wahpeton	94	49	69.3		
Walhalla	100			3.14	
Washburn	104	41	70.7	1.10	
Westhope	96	38	66.8	2.97	
Willow City	91	37	65.5	3.27	
Wishek	94	40	65.6	3.05	
Ohio.					
Akron	88	50	68.8	3.47	
Amesville	94	47	73.6	5.24	
Atwater				6.78	
Bangorville	90	52	70.6	6.25	
Bellefontaine	91	53	71.0	7.22	
Benton Ridge	90	52	71.8	2.44	
Bladensburg	95	42	70.0	4.60	
Bowling Green	91	48	71.2	2.91	
Bucyrus	90	48	70.8	1.76	
Cadiz	90	49	71.6	3.04	
Cambridge	91	47	71.6	4.55	
Camp Dennison	95	53	74.6	5.78	
Canal Dover	90	46	70.1	6.96	
Canton	87	49	69.8	6.61	
Cardington	90	48	70.4	3.19	
Chillicothe	90	49	71.8	4.31	
Circleville	91	51	73.6	5.34	
Clarington	94	50	73.4	3.18	
Clarksville	92	53	74.4	3.44	
Cleveland *a*	87	55	70.4	3.76	
Cleveland *b*	90	53	70.8	3.17	
Coalton	92	51	72.3	4.75	
Colebrook	85	41	67.1	3.29	
Dayton	95	51	74.0	8.98	
Defiance	94	49	71.4	2.77	
Delaware	90	49	71.3	9.55	
Demos	93	49	71.4	5.76	
Findlay	95	52	73.6	3.09	
Frankfort	91	52	73.6	6.24	
Fremont	94	50	73.2	2.65	
Garrettsville	88	44	68.3	5.64	
Granville	92	47	72.4	3.42	
Gratiot	87	48	70.6	4.69	
Green	91	52	72.8	3.13	
Greenhill	89	41	68.4	5.02	
Greenville	93	52	73.2	5.95	
Hillhouse	90	44	67.9	3.55	
Hiram	85	51	69.3	5.46	
Hudson	93	46	69.9	3.62	
Ironton	95	53	75.4	5.75	
Jacksonburg	95	56	74.6	10.97	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Ohio—Cont'd.	°	°	°	*Ins.*	*Ins.*
Killbuck	89	48	70.4	6.09	
Lancaster	89	51	71.8	3.59	
Lima	96	52	72.2	3.75	
McConnelsville	91	50	72.2	2.49	
Manara	89	51	71.5	4.09	
Mansfield				5.54	
Marietta	88	53	72.8	4.66	
Marion	93	49	72.6	3.27	
Medina	90	45	71.2	5.67	
Milfordton	90	44	69.9	4.89	
Milligan	90	45	71.3	4.25	
Millport	89	42	68.6	3.87	
Montpelier	93	50	70.7	4.44	
Napoleon	93	51	72.0	4.06	
Nellie	87	50	70.6	4.29	
New Alexandria	95	45	72.0	2.85	
New Berlin	91	46	70.8	5.96	
New Bremen	92	49	72.3	6.37	
New Richmond	92	55	74.8	5.11	
New Waterford	91	42	69.6	3.30	
North Lewisburg	93	52	73.2	6.25	
North Royalton	88	46	69.8	4.08	
Norwalk	95	46	72.4	3.73	
Oberlin	93[c]	46	70.2[b]	3.82	
Ohio State University	88	50	71.0	5.22	
Orangeville	89	42	68.3	4.70	
Ottawa	95	50	72.4	3.65	
Pataskala	90	49	71.4	3.77	
Philo	91	51	72.8	4.54	
Plattsburg	90	52	71.6	6.79	
Pomeroy	94	52	73.2	4.74	
Portsmouth	91	53	72.9	4.31	
Pulse	89	53	72.6	3.40	
Rittman	91	46	70.6	2.60	
St. John's College	93	53	72.0	2.56	
Rockyridge	94	49	72.7	1.68	
Shenandoah	91	46	69.7	3.12	
Sidney	92	52	73.8	7.35	
Somerset	93	52	73.0	5.15	
South Lorain	92	45	71.6	2.78	
Springfield				3.83	
Thurman	96	53	75.3	3.83	
Tiffin	90	52	71.8	1.61	
Upper Sandusky	89	52	71.8	3.23	
Urbana	91	56	72.3	3.83	
Vickery	93	48	72.2	1.72	
Warren	90	45	70.6	4.53	
Wauseon	94	46	71.6	2.61	
Waverly	94	52	74.6	4.42	
Waynesville	90	55	72.4	7.57	
Wellington	92	47	71.8	5.08	
Willoughby				3.60	
Wilson	94	50	73.5	5.15	
Wooster	90	46	70.0	4.47	
Zanesville				4.52	
Oklahoma.					
Alva				4.23	
Arapaho	104	58	82.2	3.15	
Binger	102	55	80.4	1.90	
Blackburn	102	56	79.6	3.10	
Chandler	100	59	81.4	4.09	
Cleo	102	60	81.0	5.50	
Cloud Chief	103	60	81.0	2.32	
Enid	101	60	80.1	5.20	
Erick	107	53	80.6	2.06	
Fort Reno	99	58	79.8	3.62	
Fort Sill	105	61	83.0	2.46	
Frederick	103	63	84.2	0.07	
Gage	104	60	78.9	2.95	
Grand	103	60	80.4	4.22	
Guthrie	98	65	79.4	3.33	
Harrington	102	59	78.8	2.65	
Hennessey	101	60	80.8	3.42	
Hobart	103	61[c]	82.4[d]	2.01	
Jefferson	104	60	81.2	5.31	
Jenkins	102	58	80.3	2.20	
Kenton	100	51	76.6	2.62	
Kingfisher	102	59	81.2	4.68	
Luther	100	56	81.4	3.68	
McComb	98	59	79.0	2.69	
Mangum	105	60	84.0	3.20	
Meeker	98	59	79.5	5.05	
Newkirk	102	64	82.3	2.32	
Norman	98	56	79.8	3.89	
Okeene	102	61	81.4	5.16	
Perry	102	61	80.3	5.55	
Sac and Fox Agency	96	62	79.8	3.97	
Shawnee	99	60	80.4	3.49	
Stillwater	98	60	79.4	8.15	
Taloga	109	60	83.3	3.47	
Temple	103	59	82.9	4.65	
Watonga	101	57	80.6	2.83	
Waukomis	105	60	81.1	6.32	
Weatherford	103	59	80.8	2.42	
Whiteagle	99	60	80.2	5.00	
Woodward				1.30	
Oregon.					
Alba				T.	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Oregon—Cont'd.	°	°	°	*Ins.*	*Ins.*
Albany				T.	
Alpha	94	32	62.8	0.00	
Arlington	102	46	73.5	0.00	
Ashland	97	43	69.0	0.00	
Astoria	77	47	61.7	1.22	
Aurora (near)	92	39	63.8	0.03	
Bay City	78	40	59.0	1.56	
Bend	98	29	63.6	0.00	
Beulah	111	24	65.9	0.00	
Blackbutte	90	37	66.0	0.00	
Blalock	110	49[c]	78.7[b]	0.05	
Bonita	97	39	65.2	0.00	
Bullrun				0.65	
Burns	100	29	68.0	0.15	
Carlton	95	35	64.2	T.	
Cascade Locks	94	43	68.0	0.73	
Coquille				0.00	
Corvallis	95	40	65.0	T.	
Dale				0.00	
Dayville	99	36	67.8	T.	
Doraville	89	41	62.5	0.45	
Drain	98	30	64.2	0.03	
Echo	107	43	74.4	0.00	
Ella	104	48	72.4	T	
Eugene	91	40	64.4	0.10	
Fairview	97	35	61.4	T.	
Falls City	94	40	63.6	0.02	
Forestgrove	94	35	64.8	0.06	
Gardiner	80	42	60.6	0.00	
Glendale	97	34	66.0	0.00	
Glenora	96	34	63.9	0.76	
Gold Beach	81	39	59.9	0.00	
Government Camp	82	29	54.4	1.82	
Grants Pass	103	34	69.0	0.00	
Grass Valley	97	35	61.5	T.	
Heppner	102	39	69.1	0.00	
Hood River	92	42	67.4	0.31	
Huntington	103	46	77.0	0.00	
Jacksonville	102	41	71.6	0.00	
John Day	103	32	69.6	0.00	
Joseph	96	31	64.4	0.06	
Kerby	101[c]	33	67.6[b]	0.00	
Klamath Falls	100	34	69.0	0.20	
Lagrande	100	34	69.2	0.25	
Lakeview	108	30	67.8	0.07	
Lonerock	97	33	64.0	0.00	
McKenzie Bridge	97	29	63.5	0.18	
McMinnville	96	34	64.6	0.07	
Marshfield	79	41	61.6	0.00	
Mill City	96	30	61.7	0.00	
Mount Angel	96	45	67.6	0.19	
Nehalem				1.92	
Newport	69	44	57.6	0.67	
Odell				T.	
Paisley	94	38	67.5	0.00	
Pendleton	108	38	69.8	T.	
Port Oxford	76	50	59.6	0.01	
Pine				0.00	
Prineville	97	29	63.1	0.00	
Riverside	108	36	72.2	T.	
Salem	93	44	65.8	0.03	
Silverlake	99	30	62.6	0.00	
Sparta	105	35	70.2	T.	
Stafford	95	39	65.4	0.12	
The Dalles	99	44	70.0	0.10	
Tipton				0.00	
Toledo	85	39	60.8	0.20	
Umatilla	109	45	76.8	0.00	
Vale	104	40	73.4	0.00	
Van				0.00	
Wallowa	101	30	64.6	0.07	
Wamic	98	32	64.6	1.22	
Warm Spring	105	37	69.7	T.	
Weston	100	35	66.6	T.	
Williams	101	33	68.6	0.00	
Pennsylvania.					
Aleppo	91	42	70.3	2.34	
Altoona				5.19	
Beaver Dam				3.43	
Bellefonte	91	44	71.6	3.08	
Brookville				3.97	
Browers				10.24	
California	92	49	71.5	3.09	
Cassandra	84	42	65.7	2.04	
Centerhall	89	47	68.9	4.76	
Clarion				3.68	
Claysville	92	42	71.0	4.76	
Coatsville	92	48	72.2	6.83	
Confluence				5.82	
Coudersport	87	36	65.2	3.57	
Davis Island Dam				2.70	
Derry	93	43	70.4	5.26	
Doylestown				9.45	
East Mauch Chunk	93	46	70.1	5.95	
Easton	90	50	70.8	5.14	
Ellwood Junction				1.92	
Emporium	86	43	67.7	3.26	
Ephrata	91	48	71.4	8.28	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Pennsylvania—Cont'd.	°	°	°	*Ins.*	*Ins.*
Everett	88	40	69.1	5.26	
Forks of Neshaminy				7.57	
Franklin	90	43	68.2	4.89	
Freeport	94	46	71.0	3.29	
Gettysburg	91	46	71.7	4.90	
Girardville				6.79	
Gordon	91	41	67.8	7.67	
Greensboro				3.76	
Greenville	89	44	69.2	4.10	
Hamburg	95	48	71.9	9.20	
Hanover	93	49	73.0	9.16	
Herrs Island Dam				3.46	
Huntingdon	90	45	69.0	6.94	
Indiana	87	47	68.9	2.98	
Irwin	93	45	71.0	5.84	
Johnstown				5.73	
Keating				4.91	
Lansdale				9.15	
Lawrenceville	89	39	67.4	3.05	
Lebanon	92	48	71.0	8.21	
Leroy	84	46	66.6	5.40	
Lewisburg	91	46	70.6	5.40	
Lockhaven	91	46	71.0	5.74	
Lock No. 4				3.05	
Lycippus	90	51	70.0	4.72	
Marion	91	46	71.0	4.73	
Mifflintown	90	46	70.4	7.08	
Milford	90	43	67.4	6.16	
Montrose	84	43	66.0	4.96	
New Germantown				5.65	
Ottsville				7.42	
Parker				5.10	
Philadelphia	90	57	73.4	9.06	
Pocono Lake	83	37	63.2	6.75	
Point Pleasant				9.81	
Pottsville				9.21	
Reading	91	48	72.0	7.81	
Saegerstown	88	41	67.8	6.04	
St. Marys	87	39	66.6	5.60	
Saltsburg				4.24	
Seisholtzville				10.83	
Selinsgrove	91	47	70.7	6.03	
Shawmont				7.24	
Skidmore	91[d]	44[d]	70.0[d]	4.54	
Smiths Corners				10.01	
Somerset	86	42	66.0	9.57	
South Eaton	86	47	67.8	5.42	
Springdale				3.45	
Springmount				8.87	
State College	86	45	67.6	4.28	
Swarthmore	89[i]	51[i]	72.4[i]	4.28	
Towanda	87	45	67.8	4.83	
Uniontown	90	48	71.0	3.70	
Warren	88	44	67.4	3.88	
Wellsboro	89	43	67.8		
Westchester	90	53	72.5	7.30	
West Newton				3.30	
Wilkesbarre	90	49	70.2	4.40	
Williamsport	87	48	69.8	5.78	
Rhode Island.					
Bristol	82	49	66.8	3.90	
Kingston	87	45	66.3	4.66	
Narragansett	86	45	66.6	4.99	
Pawtucket				5.12	
Providence *a*	92	52	71.4	2.87	
South Carolina.					
Aiken	107	46	82.9	3.10	
Allendale	98	64	79.5	5.38	
Anderson	101	57	77.3	5.23	
Barksdale	100	55	76.0	4.20	
Batesburg	98	56	78.0	4.68	
Beaufort	94	65	79.6	2.30	
Bennettsville	96	62	79.3	6.89	
Blackville	103	58	80.2	3.81	
Blair				4.74	
Bowman	99	57	78.2	3.85	
Calhoun Falls				2.98	
Camden				7.74	
Chappell				5.50	
Cheraw *a*	98	55	76.6		
Clarks Hill	100	56	79.0	5.71	
Clemson College	93	55	76.6	7.20	
Conway	93	51	77.5	6.85	
Darlington	100	52	76.4	6.55	
Dillon	99	54	77.8	4.65	
Due West	96	60	79.2	3.22	
Edisto				6.94	
Effingham				3.70	
Enoree				8.33	
Florence	100	54	77.9	4.64	
Gaffney	98	52	77.3	8.69	
Georgetown	92	62	77.6	2.72	
Greenwood	95	56	76.4	4.12	
Heath Springs	100	58	78.6	8.07	
Kingstree	97	62	79.6	4.44	
Liberty	95	52	76.6	8.70	
Little Mountain	101	56	77.8	2.91	
Newberry	101	56	78.4	4.23	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
South Carolina—Cont'd.	°	°	°	*Ins.*	*Ins.*
Pelzer				4.82	
Pinopolis *e*	90	62	76.3	4.82	
St. George	97	60	78.3	4.15	
St. Matthews	96	59	77.4	4.75	
St. Stephens				6.30	
Saluda	100	56	77.4	7.98	
Santuck	100	54	76.3	10.87	
Selvern	100	53	77.6	6.72	
Smiths Mills				4.25	
Society Hill	94	57	77.3	7.84	
Statesburg	97	57	77.8	6.19	
Summerville	94	62	77.3	7.61	
Trenton	100	57	77.5	4.01	
Trial	99	57	77.2	3.67	
Walhalla *a*	94	55	74.4		
Walterboro	98	61	79.4	3.13	
Winnsboro	101	55	77.1	9.50	
Yemassee	97	61	78.3	4.77	
Yorkville	100	56	77.6	8.62	
South Dakota.					
Aberdeen	95	47	70.2	3.39	
Academy	101	55	74.6	0.92	
Alexandria	98	52	75.6	1.48	
Armour	104	48	75.2	1.67	
Ashcroft	108	42[c]	72.6[b]	0.48	
Bowdle	97	45	70.0	2.80	
Brookings	97	48	70.2	4.54	
Canton	97	49	73.6	2.61	
Centerville	97	51	74.0	1.63	
Chamberlain	104	51	76.0	1.07	
Clark	93	47	69.4	2.74	
Clear Lake	93	52	70.8	6.41	
Doland	92	50	71.0	8.22	
Elkpoint	99	51	76.2	3.79	
Fairfax	100	56	76.6	1.54	
Farmingdale				1.65	
Faulkton	94	48	69.9	3.13	
Flandreau	96	52	70.8	3.91	
Forestburg	98	48	72.6	2.01	
Fort Meade	98	45	70.0	0.62	
Gannvalley	101	49	73.4	2.45	
Grand River School	101	45	71.0	0.36	
Greenwood	101	56	75.8	1.97	
Highmore	95	48	71.5	3.56	
Hitchcock				3.68	
Hotch City	102	49	72.6	1.70	
Howard	98	52	72.6	4.07	
Howell	98	46	71.2	3.08	
Ipswich	95	44	70.4	3.00	
Kidder	96	41	68.6	4.45	
Kimball	105	51	75.9	0.72	
Leola	95	45	69.2	3.70	
Marion	97[d]	49[d]	73.7[d]	2.73	
Mellette	99	45	71.3	3.80	
Menno	98	53	73.2	3.04	
Mil'bank	95	48	70.4	3.55	
Mitchell	101	52	73.8	1.53	
Oelrichs	100	43	70.8	2.46	
Plankinton	99	51	74.1	1.00	
Ramsey	100	45[c]	71.8[c]	4.87	
Redfield	98	47	71.0	4.38	
Rosseau				1.58	
Sioux Falls	98	53	74.4	4.73	
Spearfish	94	48	69.0	0.72	
Stephan	104	49	73.6	1.16	
Vermillion	95[h]	54[h]	74.7[h]	2.20	
Watertown	93	46	68.9	2.86	
Wentworth	98	52	73.4	3.45	
Whitehorse	101	48	72.2	3.98	
Wolsey				2.68	
Tennessee.					
Andersonville	93	55	76.8	12.05	
Arlington	96	58	78.8	4.91	
Benton	86	54	76.7	5.99	
Bluff City				4.50	
Bolivar	96	56	77.8	3.59	
Bristol	88	51	72.4	3.10	
Brownsville	94	64	80.8	1.79	
Byrdstown	90	55	74.7	5.87	
Carthage	97	60	78.2	2.48	
Cedar Hill	95	55	78.0	3.30	
Celina				3.95	
Charleston				6.26	
Clarksville	94	58	77.6	3.03	
Clinton				7.38	
Covington	93	60	79.0	5.27	
Decatur	97	56	77.0	7.35	
Dickson	95	54	76.8	3.84	
Dover	97	53	78.8	3.66	
Dyersburg	96	60	78.5	4.81	
Elizabethton	89	52	72.4	4.73	
Erasmus	90	45	71.8	6.97	
Florence	93	57	76.6	4.12	
Franklin	91	58	76.5	4.56	
Goodrich	94	49	76.1	5.84	
Grace				5.40	
Greeneville	90	51	73.2	3.82	
Halls Hill				4.30	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Tennessee—Cont'd.	°	°	°	*Ins.*	*Ins.*
Hamilton	99	54	77.6	4.10	
Harriman	91	56	75.0	7.09	
Hohenwald	94	48	74.0	4.84	
Iron City	96	55	77.0	4.03	
Isabella	94	54	75.0	2.70	
Jackson	97	56	79.0	3.59	
Johnsonville	98	54	78.2	3.31	
Jonesboro	92	50	72.8	10.64	
Kenton	91	56	76.6	3.32	
Kingston				6.54	
Lafayette	97	53	76.4	5.38	
Leadvale				4.02	
Lewisburg	99	55	78.6	7.54	
Loudon				4.95	
Lynnville	95	56	76.6	4.90	
McGee				4.93	
McMinnville	95	53	76.4	3.58	
Maryville	96	54	76.2	7.85	
Milan	94	57	78.1	3.33	
Newport	92	58	74.8	6.75	
Palmetto	99	54	77.4	5.16	
Pope	98	55	78.8	3.33	
Rogersville	90	53	74.0	5.30	
Rugby	95	50	73.8	7.25	
Savannah	98	56	77.9	3.03	
Sewanee	92	57	73.8	4.15	
Silver Lake	82	45	67.0	4.62	
Springdale	94	52	75.3	5.79	
Springville	96	53	77.0	3.61	
Tazewell				4.80	
Tellico Plains	96	53	76.4	5.24	
Tracy City	90	49	72.4	3.64	
Trenton	96	54	79.6	1.94	
Tullahoma	95	53	76.4	3.02	
Union City	94	56	77.8	3.00	
Walling				5.44	
Waynesboro	96	53	76.7	8.39	
Wildersville	89	58	76.2	4.01	
Yukon	97	57	76.6	3.68	
Texas.					
Albany	106	61	85.0	1.05	
Alvin				2.63	
Arthur				1.64	
Athens	99	64	83.1	T.	
Austin	98	70	84.9	0.92	
Ballinger	104	66	84.9	0.17	
Beaumont				2.47	
Beeville	104	70	86.0	1.32	
Blanco	101	55	82.8	0.92	
Boerne	102	58	79.8	1.60	
Booth				3.30	
Bowie	106	65	84.4	2.06	
Brazoria	101	70	83.2	3.14	
Brenham	99	69	84.6	0.56	
Brownwood	104	62	85.0	0.21	
Channing	102	60	77.7	2.03	
Childress	103	60	81.4	1.75	
Clarksville	100	63	81.6	2.97	
Claude	97	58	77.6	2.71	
Claytonville	103	60	83.0	0.53	
Coleman	100	64	82.6	1.50	
College Station	102[b]	63[c]	85.9[c]	1.61	
Columbia	97	69	83.4	0.95	
Columbus				1.10	
Comanche				0.75	
Comstock				1.13	
Corsicana	101	67	85.4	1.53	
Crockett	102	65	84.2	1.50	
Cuero	103	71	87.0	1.35	
Dallas	100	62	83.0	0.32	
Danevang	100	67	84.8	3.13	
Decatur	99	64	81.8	1.54	
Dialville	95	65	81.3	0.88	
Dublin	106	60	84.6	0.86	
Duval	100	67	83.6	2.24	
Eagle Pass	109			2.40	
Fort Brown	100	72	86.5	T.	
Fort Clark	104	70	86.8	0.40	
Fort Davis	92	55	73.0	1.48	
Fort McIntosh	109	69	89.0	0.00	
Fort Ringgold	107	71	89.6	T.	
Fredericksburg	100[d]	57[d]	81.4[d]	1.61	
Gainesville	99	62	80.8	3.14	
Georgetown	102	62	84.0	0.89	
Gonzales				0.86	
Graham	103	59	83.4	1.87	
Grapevine	104	64	85.6	0.10	
Greenville	103	64	84.2	0.89	
Hale Center	93	59	77.2	2.36	
Hallettsville	101	70	85.5	T.	
Haskell	106	63	84.1	1.56	
Hearne	101	66	84.7	0.63	
Hempstead				0.80	
Henrietta	107	65	84.8	1.15	
Hereford				0.57	
Hewitt				2.64	
Hillsboro	99	65	83.6	0.11	
Hondo	104			0.23	

TABLE II.—*Climatological record of cooperative observers*—Continued.

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Texas—Cont'd.	°	°	°	*Ins.*	*Ins.*
Houston	98	70	84.5	0.58	
Hubbard	101	67	84.6	0.30	
Huntsville	102	62	85.0	0.10	
Jefferson	94	62	81.2	2.29	
Junction				0.99	
Kaufman	101	66	85.4	0.75	
Kent	100	60	78.0	0.09	
Kerrville	101	58	82.8	0.90	
Knickerbocker	106	60	83.4	0.55	
Kopperl				2.50	
Lampasas	104	57	84.0	1.05	
Lapara				2.25	
Liberty	100			1.10	
Llano	102	55	82.0	0.30	
Longlake				1.41	
Longview	100	65	83.4	0.40	
Luling	102	66	85.8	1.00	
Marlin	102	63	85.3	0.65	
Menardville	105	56	82.8	0.00	
Mexia	99	65	83.9	0.42	
Mobeetie	102	55	78.6	3.01	
Mount Blanco	99	59	77.8	3.00	
Mount Pleasant	100	64	82.6	1.23	
Nacogdoches	95	64	81.2	3.69	
New Braunfels	100	67	84.7	0.26	
Panter				0.40	
Paris	100	67	83.2	2.90	
Pearsall	106	70	87.6	0.35	
Pierce	100	70	84.4	0.83	
Port Lavaca	102	73	84.6	1.42	
Quanah	105	60	83.0		
Rhineland	105	60	80.6	4.60	
Riverside				0.60	
Rockisland	102	68[a]	84.6[a]	0.44	
Rockland				2.49	
Rockport	94	74	85.4	1.00	
Runge	105			1.52	
Sabinal	107	61	86.4	1.35	
San Marcos	101	63	84.6	0.65	
San Saba	103	57	83.8	1.10	
Santa Gertrude				0.00	
Sherman	98	67	83.0	0.98	
Sonora	103	61	83.6	1.18	
Sugarland				0.50	
Sulphur Springs	98	63[a]	82.6[a]	0.25	
Temple	100	60	83.6	0.61	
Texline	99	50	72.7	0.04	
Tyler	100	64	83.6	0.36	
Valley Junction				0.70	
Victoria	102	70	86.0	1.15	
Waco	103	65	87.1	2.22	
Waxahachie	102	61	83.5	0.11	
Weatherford	104	62	84.2	0.18	
Wharton	97	68	84.2	2.00	
Wichita Falls				1.40	
Willspoint	109	62	82.4	1.00	
Utah.					
Alpine				0.61	
Alta				0.85	
Aneth	101	49	77.0	0.07	
Beaver				0.95	
Blackrock	95	43	70.6	0.75	
Blacksmith Forks				0.44	
Castledale	95	38	66.8	0.98	
Castle Rock				0.86	
Cisco	98	48	74.2	0.41	
Cedar Creek				0.58	
Corinne	105	45	75.1	1.11	
Coyote	94[d]	35[d]	64.2[d]	0.75	
Experiment Farm	108	53	80.4		
Farmington	92	47	71.4	0.52	
Fillmore	105	50	76.6	0.62	
Fort Duchesne	99	42	71.4	0.06	
Frisco	96	53	73.5	1.04	
Garrison	95	43	72.3	0.83	
Giles	103	47	75.4	1.15	
Government Creek	95	48	73.9	0.50	
Grayson	106	49	76.4	0.15	
Green River	104	48	78.4	0.06	
Heber	94	34	66.2	0.58	
Henefer	95	35	65.6	0.93	
Hite	107	62	84.2	0.19	
Huntsville				1.12	
Ibapah	94	37	69.4	2.22	
Indianola				0.20	
Kanab	97	42	68.6	1.10	
Kelton	103	38	68.8	1.13	
La Sal	86[c]	46[d]	67.4[d]	T.	
Levan	98	49	71.2	0.47	
Lea	90	38	64.4	0.67	
Logan	99	44	73.4	0.73	
Lucin	98	48	72.8	0.65	
Manti	99	45	69.1	0.20	
Marion				0.48	
Marysvale	92	40	65.8	1.05	
Meadowville	89	41	65.4	1.77	
Millville				0.95	
Minersville	97	61	77.2	0.65	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Utah—Cont'd.	°	°	°	*Ins.*	*Ins.*
Moab	99	50	75.5	0.15	
Morgan	92	38	67.0	0.36	
Mount Nebo	96	50	75.0	0.09	
Nephi				0.49	
Oak City	99	51	76.0	0.63	
Ogden	93	51	74.3	1.17	
Panquitch				0.97	
Parowan	97	45	70.0	0.37	
Pinto	94	38	64.6	1.83	
Plateau	88	36	64.8	0.70	
Ranch	90	36	63.0	0.24	
Randolph				1.07	
Rockville	110	55	81.6	1.44	
St. George	110	56	81.7	0.76	
Salt Air	93	58	77.6	0.82	
Scipio	92	36	68.2	1.01	
Snowville	96	36	68.4	0.16	
Strawberry Valley				1.28	
Sunnyside				1.63	
Thistle				0.24	
Tooele	96	55	74.4	1.15	
Tropic	96	41	68.0	0.10	
Trout Creek	99	42	72.0	0.75	
Utah Lake	94	35	67.6	0.39	
Vernal	93	48	71.9	0.41	
Wellington	98	39	70.0	1.90	
Woodruff	90	26	59.2	0.11	
Vermont.					
Burlington	86	50	68.0	3.98	
Cavendish	88	40	63.8	3.50	
Chelsea	82	40	61.2	4.45	
Cornwall	84	50	67.2	3.34	
Enosburg Falls	86	39	64.0	4.63	
Jacksonville	87	39	62.0	4.70	
Manchester	84	37	62.5	3.61	
Norwich	87	38	62.0	4.31	
St. Johnsbury	90	38	64.4	4.62	
Wells	84	42	63.6	2.78	
Westfield				3.87	
Woodstock	86	40	62.2	3.75	
Virginia.					
Arvonia	97	48	75.0	5.79	
Ashland	92	53	75.0	6.41	
Barboursville	88	51	73.6	4.36	
Bigstone Gap	87	51	72.2	5.18	
Blacksburg	87	44	68.2	6.20	
Buchanan				3.03	
Buckingham				8.37	
Burkes Garden	82	41	64.9	5.06	
Callaville	94	52	74.6	7.20	
Cape Henry	92	60	75.8	4.51	
Charlottesville	91	50	73.7	5.67	
Clarksville				6.84	
Columbia		51		4.44	
Dale Enterprise	91	44	70.8	3.07	
Danville				3.59	
Dinwiddie	97	49	74.4	5.79	
Elk Knob	86	57	71.2	4.03	
Farmville	93	50	74.7	2.15	
Fredericksburg	91	50	73.5	8.43	
Grahams Forge	85	46	68.6	3.99	
Greenwich	89	50	73.2	4.65	
Hampton	93	59	77.3	3.69	
Hot Springs	83	45	66.8	4.32	
Ivanhoe				5.51	
Lexington	91	43	71.7	3.44	
Lincoln	91	44	72.3	3.28	
Marion	86	48	69.2	3.42	
Mendota				3.70	
Newport News	91	59	76.7	5.94	
Petersburg		53		5.66	
Quantico	92	55	74.0	7.94	
Radford				2.60	
Randolph				2.85	
Riverton				2.05	
Roanoke	94[b]	48[f]	75.7[d]	1.69	
Rockymount	93	46	72.5	6.22	
Saxe	94	45	74.7	5.14	
Shenandoah				2.78	
Speers Ferry				6.69	
Spottsville	96	54	74.8	3.68	
Staunton	89	43	72.0	2.86	
Stephens City	93	45	72.6	2.91	
Warsaw	94	48	74.2	4.96	
Williamsburg	92	53	73.6	2.22	
Woodstock	95	46	74.2	4.10	
Washington.					
Aberdeen	80	40	60.3	1.66	
Anacortes	75	44	59.4	1.43	
Ashford				1.41	
Bellingham	81	39	60.6	1.03	
Blaine	78	39	59.8	1.60	
Brinnon	86	48	62.8	0.51	
Cedonia	93	37	64.4	0.28	
Centralia	92	35	63.8	0.61	
Cheney	101	31	66.8	0.00	
Clearbrook	89	36	59.9	1.70	
Clearwater	80	40	59.6	3.07	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Washington—Cont'd.	°	°	°	*Ins.*	*Ins.*
Cle Elum	99	33	63.6	0.69	
Colfax	99[a]	32	64.7	0.00	
Colville	100	33	65.3	0.11	
Conconully	95	36	64.8	0.27	
Coupeville	80	45	61.0	0.81	
Crescent	100	36	67.2	0.02	
Cusick	100	30	63.8	0.60	
Danville	100	38	67.2	0.31	
Dayton	99	37	68.6	T.	
Easton				0.06	
East Sound	89	35	59.0	0.95	
Ellensburg	97	36	66.2	0.34	
Ephrata	104	43	73.6	0.05	
Fort Simcoe				0.36	
Granite Falls				2.70	
Hatton	106	37	70.2	T.	
Horse Heaven				0.00	
Ilwaco	75	47	59.9	1.32	
Kennewick	105	41	74.2	T.	
Kiona	104	39	73.1	0.00	
Lacenter	92	38	63.4	0.39	
Lakeside	100	50	71.6	0.15	
Lester	82[1]	37[1]	58.5[1]	1.26	
Lind	101	38	70.7	0.03	
Loomis	100	44	71.9	0.10	
Merritt				0.65	
Mottinger Ranch	110	45	76.8	T.	
Mount Pleasant	92	40	64.8	0.48	
Moxee	102	36	68.2	0.07	
Northport	97	32	63.0	0.41	
Olga	74	43	58.2	1.13	
Olympia	93	37	63.0	0.30	
Pinehill	100	41	69.2	0.32	
Pomeroy	102	37	68.4	T.	
Port Townsend	77	45	59.8	0.80	
Pullman	100	36	68.6	0.18	
Rattlesnake	97	41	68.6	0.05	
Republic	99	29	63.4	0.51	
Ritzville				0.00	
Rosalia	98	33	66.1	0.05	
Sedro	83	39	60.9	1.96	
Snohomish	82	44	63.2	2.22	
Snoqualmie	91	40	65.1	1.44	
Southbend	85	42	61.7	2.06	
South Ellensburg	98	40	67.8	0.10	
Sprague				0.00	
Sunnyside	98	39	68.0	0.13	
Tekoa				0.05	
Touchet	108	42	74.6	0.02	
Trinidad	103	41	76.0	0.00	
Twisp	102	37	67.0	0.15	
Union	93	37	64.3	0.46	
Vancouver	97	40	67.8	0.18	
Vashon	81	44	62.4	0.40	
Wahluke	107	42	73.3	T.	
Waterville	96	37	65.4	0.35	
Wenatchee (near)	98	41	67.0	0.28	
Wilbur	95	29	63.2	0.30	
Zindel	109	49	82.2	0.00	
West Virginia.					
Bancroft	94	53	75.2	5.15	
Bayard	87	40	65.4	4.54	
Bens Run	92	54	75.4	3.96	
Berkley Springs	94[c]	46[c]	70.5[c]	6.11	
Bluefield	85	50	67.8	4.50	
Buckhannon	95	46	70.2	3.20	
Burlington				5.10	
Cairo	90	45	71.9	1.93	
Central	91	46	71.0	4.30	
Charleston	90	56	74.2	3.82	
Creston	90	50	72.6	4.50	
Cuba	88	48	71.6	3.86	
Elkhorn	87	50	69.8	3.83	
Fairmont	91	50	70.2	5.19	
Glenville	93	50	73.4	5.20	
Grafton	90	48	71.4	5.57	
Green Sulphur Springs	87	45	69.2	2.01	
Harpers Ferry				4.17	
Hinton				3.09	
Huntington	95	53	74.6	8.32	
Leonard	93	50	66.8	1.32	
Lewisburg	87	45	68.8	2.89	
Logan	88	52	72.0	4.29	
Lost Creek	91	46	69.4	4.06	
Madison	91	52	73.2	4.61	
Marlinton	84	46	67.6	2.60	
Martinsburg	92	49	73.2	3.25	
Moorefield	96	43	72.6	3.95	
Morgantown	90	49	71.2	4.16	
Moundsville	94	49	72.8	3.11	
New Cumberland	88	44	70.0	2.73	
New Martinsville	96	45	74.4	3.69	
Nuttallburg	89	48	67.2	4.05	
Oceana	92	52	72.4	3.50	
Parsons	86	45	68.1	3.33	
Philippi	94	47	70.3	3.91	
Pickens	87	46	66.7	4.10	
Point Pleasant	93	55	75.2	3.38	

TABLE II.—*Climatological record of cooperative observers. Late reports for June*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
West Virginia—Cont'd.	°	°	°	*Ins.*	*Ins.*
Princeton	82	48	68.2	4.05	
Romney	93	44	71.5	4.75	
Rowlesburg				5.76	
Ryan	90	48	71.5	5.59	
Smithfield	100	49	75.6	6.04	
Southside	94	50	73.2	4.48	
Sutton	93[c]	50[c]	74.8[c]	3.40	
Terra Alta	84	47	66.8	7.50	
Uppertract	91	45	70.6	5.18	
Valley Fork	92	51	71.8	7.81	
Wellsburg	86	48	69.9	3.20	
Weston				3.39	
Wheeling	98	55	79.4	3.05	
Williamson	93	53	74.2	3.18	
Wisconsin.					
Amherst	89	44	67.2	6.25	
Antigo	90	42	65.8		
Appleton	94	41	70.0	5.02	
Appleton Marsh	92	43	66.5	5.67	
Ashland	93			3.48	
Barron	94	42	67.7	8.50	
Berlin	94	46	68.8	5.29	
Black River Falls				4.54	
Burnett	89	47	68.5	4.45	
Butternut	89	39	65.2	6.34	
Chilton	90	48	69.0	4.87	
Chippewa Falls				5.21	
Citypoint				6.05	
Cranberry Ex. Sta	93	32	64.1	4.65	
Darlington	99[c]	41[c]	70.8[c]	2.93	
Dodgeville	95[d]	48[d]	70.8[d]	2.93	
Downing	90	41	66.2	7.40	
Eau Claire	92	50	70.4	6.82	
Florence	88[d]	41[d]	65.1[d]	2.04	
Fond du Lac	93	44	69.0	5.68	
Grand Rapids	90	48	68.2	5.01	
Grand River Locks				4.47	
Grantsburg	91	43	68.4	5.18	
Hancock	93	48	68.2	6.56	
Harvey	89	49	69.5	5.33	
Hayward	88	38	65.5	3.54	
Hillsboro	94	42	68.4	3.95	
Koepenick	92	40	65.4	7.10	
Lancaster	96	49	71.4	3.27	
Manitowoc	89	46	67.4	3.38	
Mauston	90	44	68.4	3.83	
Meadow Valley	92	44	67.4	5.69	
Medford	93	52	71.3	5.60	
Menasha				4.36	
Minocqua	88	50	67.2	4.27	
Mount Horeb	94	48	70.6	3.95	
Neillsville	94	48	69.9	5.19	
New London	92	46	68.8	5.69	
New Richmond [b]	96	48	70.8		
Oconto	91	43	67.8	2.90	
Osceola	92	44	67.6	5.35	
Oshkosh	92	50	70.0	4.04	
Pine River	90	49	67.9	5.21	
Portage	90	50	69.6	3.57	
Port Washington	86	54	68.4	4.25	
Prairie du Chien	99	51	73.7	7.48	
Prentice	89	42	66.8	6.59	
Racine	90	56	71.7	5.56	
Sheboygan	90	50	69.9	4.14	
Stanley	88	45	66.5	5.28	
Stevens Point	89	47	67.2	6.94	
Sturgeon Bay Canal	93	45	66.5	2.45	
Tomahawk	90	46	67.2	5.57	
Valley Junction	95	41	68.4	4.38	
Viroqua	91	49	69.8	4.24	
Watertown	88	48	68.5	6.48	
Waukesha	87	51	69.2	4.33	
Waupaca	92	50	69.4	5.62	
Wausau	88	47	67.2	3.93	
Whitehall	92	47	68.6	5.38	
Wyoming.					
Afton	94	35	62.4	0.71	
Alcova	97	45	70.1	0.32	
Barnum				0.55	
Basin	102	48	76.5	T.	
Bedford	89	35	62.1	0.64	
Border	91	29	62.2	0.37	
Buffalo	95	36	66.6	0.60	
Cambria	98	46	70.9	1.22	
Chugwater	90	41	65.6	0.57	
Clark				0.56	
Daniel	81	30	55.6	1.20	
Eatons Ranch	96[f]	48[f]	70.0[f]	T.	
Elk Mountain				1.52	
Evanston	88	36	62.0	0.71	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Wyoming—Cont'd.	°	°	•	*Ins.*	*Ins.*
Fort Laramie	101	44	72.0	1.49	
Fort Washakie	90	31	63.8	0.51	
Gillette	98	41	71.4	1.72	
Granite Canyon	84	37	61.5	0.34	
Granite Springs				0.97	
Green River	95	39	67.4	0.54	
Griggs	95	38	67.1	0.29	
Hatton				0.84	
Hyattville	98	42	70.4		
Iron Mountain	89	39	64.2	1.73	
Kirtley	94	41	66.4	2.65	
Laramie	90	40	63.0	0.83	
Leo	88	31	63.9	0.29	
Little Medicine	85	38	60.6	1.24	
Lolabama Ranch	84	33	59.2	1.03	
Lusk	93	35	65.0	3.08	
Marquette	87	38	64.2	0.23	
Meeteetse	97	39	67.2	0.38	
Moore	91[d]	38[d]	66.3[d]	1.65	
Moorcroft	100	42	70.2	3.10	
Phillips	94	41	68.4	2.03	
Pine Bluff	99	44	69.9	1.96	
Rambler	76	34	55.0	0.82	
Rock Springs	90	37	68.4	0.19	
Sheridan	95	38	67.1	T.	
South Pass City	87	31	59.6	1.03	
Story	93	38	67.9	0.19	
Thayne	90[e]	30[e]	59.6[e]	0.31	
Wells	79	30	54.7	1.70	
Wilson	88	28	58.8	1.10	
Yellowstone Pk. (Foun'n)	83	29	56.8	0.64	
Yellowstone Pk. (Grand C)	80	40	63.5	0.60	
Yellowstone Pk. (Lake)	89	29	56.8	1.98	
Yellowstone Pk. (Norris)	87	28	57.2	0.80	
Yellowstone Pk. (Old F. I)	92	30	62.1	1.61	
Yellowstone Pk (Riverside)	90	27	57.5	0.82	
Yellowstone Pk (Snake R)	86	28	57.4	1.22	
Yellowstone Pk. (Soda B.)	86	30	57.4	1.15	
Yellowstone Pk. (Thumb)	80	30	57.2	0.59	
Porto Rico.					
Adjuntas	90	53	72.6	13.08	
Agua Buenos				9.91	
Aguirre	98	72	83.0	3.86	
Aibonito	89	63	76.8	5.08	
Arecibo	94	63	78.2	6.71	
Barros	90	62	77.4	5.10	
Bayamon	93	67	80.0	8.11	
Caguas	93	65	79.1	6.52	
Canovanas	91	73	81.6	12.21	
Cidra	93[c]	63	77.9[c]	7.50	
Coamo	93	67	80.6	8.55	
Coloso	93	67	80.4	10.99	
Corozal	92	64	79.0	5.57	
Fajardo	93	72	83.4	7.75	
Josefa				3.37	
Humacao	91	77	84.2	15.17	
Ingenio				11.12	
Isabela	91	70	80.6	4.06	
Juana Diaz	93	70	83.1	5.22	
La Carmelita	90	65	76.6	15.41	
La Ysolina	93	64	77.8	7.10	
Lares	94	60	77.6	7.49	
Las Cruces	90	64	74.0	21.19	
Las Marias	92	64	78.0	11.38	
Manati	98	69	82.0	3.93	
Maunabo	95	72	83.4	6.81	
Mayaguez	94	66	80.2	10.89	
Morovis	97	60	79.2	14.83	
Ponce	96	70	82.8	2.57	
Rio Blanco	89	62	79.0	15.08	
Rio Piedras				12.18	
San German	95	61	78.9	4.43	
San Lorenzo	95	67	80.3	8.83	
San Salvador	89	64	76.0	7.51	
Santa Isabel	95	68	81.2	1.93	
Vega Baja	96	69	82.2	6.03	
New Brunswick.					
St. John	73	45	58.8	1.93	
West Indies.					
Basseterre, St. Kitts	88	69	81.6	3.90	
Bridgetown, Bar	89	72	81.0	4.72	
Camaguey, Cuba	93	67	81.4	9.37	
Colon, Panama	86	68	78.6	14.04	
Curacoa, W. I	89	71	82.7	0.54	
Kingston, Jamaica	90	70	80.2	4.35	
Port of Spain	90	68	78.4	8.42	
Roseau	92	73	81.6	11.33	
Santiago de Cuba	95	72	82.2	2.26	
Santo Domingo	91	70	79.6	4.66	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Late reports for July, 1905.					
Alaska.	°	°	°	*Ins.*	*Ins.*
Copper Center	88	33	59.2	1.35	
Fairbanks	79	30	52.0		
Fort Egbert	91	40	64.8	1.52	
Juneau	83	48	60.0	1.93	
Kenai	81	36	55.8	1.06	
Loring	87	42	60.8	5.26	
Nushagak	78	36	56.8	3.84	
Petersburg	76	39	56.6	4.46	
Rampart	86	32	56.0	1.99	
Sunrise	75	38	56.6	1.40	
Tanana	85	30	59.2	0.37	
Teikell	88	32	56.8	1.05	
Udakta	69	49	52.3	1.73	
Wood Island	74	32	59.2	2.10	
Arkansas.					
Arkansas City				5.22	
California.					
Cochran Flat				0.00	
Glendora				0.00	
San Miguel Island				0.00	
Ventura	32	50	65.2	0.08	
Florida.					
Plant City	95	68	80.6	14.08	
Illinois.					
Albion	97	57	76.2	5.88	
Iowa.					
Denison	95	45	69.2	3.68	
Wapello	93	55	72.0	2.52	
Kansas.					
Coffeyville	102	55	79.6		
Louisiana.					
Southern University				5.10	
Minnesota.					
Campbell	94	41	66.4	4.21	
New Mexico.					
Mountain Air	96	42	66.6	2.47	
New York.					
Carvers Falls	91	47	70.8	5.33	
North Carolina.					
Hendersonville	88	55	70.7	12.90	
Manteo	96	68	80.1	2.95	
Oregon.					
Tipton				0.00	
Porto Rico.					
Arecibo	93	62	77.4	4.29	
Mexico.					
Coatzacoalcos	91	64	78.0	6.41	
Nicaragua.					
Bluefields	86	72	79.2	40.21	

EXPLANATION OF SIGNS.

• Extremes of temperature from observed readings of dry thermometer.

A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:

[1] Mean of 7 a. m. + 2 p. m. + 9 p. m. + 9 p. m. + 4.
[2] Mean of 8 a. m. + 8 p. m. + 2.
[3] Mean of 7 a. m. + 7 p. m. + 2.
[4] Mean of 6 a. m. + 6 p. m. + 2.
[5] Mean of 7 a. m. + 2 p. m. + 2.
[6] Mean of readings at various hours reduced to true daily mean by special tables.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An italic letter following the name of a station, as "Livingston *a*," "Livingston *b*," indicates that two or more observers, as the case may be, are reporting from the same station. A small roman letter following the name of a station, or in figure columns, indicates the number of days missing from the record; for instance, "[n]" denotes 14 days missing.

No note is made of breaks in the continuity of temperature records when the same do not exceed two days. All known breaks of whatever duration, in the precipitation record receive appropriate notice.

CORRECTIONS, JULY, 1905.

Wisconsin, Port Washington, make mean temperature 66.1 instead of 63.6.

TABLE III.—*Resultant winds from observations at 8 a. m. and 8 p. m., daily, during the month of August, 1905.*

Stations.	Component direction from—				Resultant.	
	N.	S.	E.	W.	Direction from—	Duration.
New England.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
Eastport, Me	18	24	7	25	s. 72 w.	19
Portland, Me	14	29	8	30	s. 39 w.	19
Concord, N. H.†	17	8	6	6	n.	9
Northfield, Vt	21	32	12	9	s. 15 e.	11
Boston, Mass	18	20	13	28	s. 82 w.	15
Nantucket, Mass	18	23	15	27	s. 67 w.	13
Block Island, R. I	19	24	13	25	s. 67 w.	13
Providence, R. I	24	15	10	27	n. 62 w.	19
Hartford, Conn	22	30	10	8	s. 14 e.	8
New Haven, Conn	22	22	13	20	w.	7
Middle Atlantic States.						
Albany, N. Y	25	31	8	8	s.	6
Binghamton, N. Y.†	11	7	13	10	n. 37 e.	5
New York, N. Y	17	22	17	20	s. 31 w.	6
Harrisburg, Pa	21	17	21	17	n. 45 e.	6
Philadelphia, Pa	18	26	15	18	s. 21 w.	8
Scranton, Pa	23	23	12	23	w.	11
Atlantic City, N. J	15	24	14	22	s. 42 w.	12
Cape May, N. J	16	31	13	13	s.	15
Baltimore, Md	18	25	12	20	s. 49 w.	11
Washington, D. C	20	28	14	9	s. 32 e.	9
Lynchburg, Va	21	23	15	17	s. 45 w.	3
Mount Weather, Va	16	23	16	19	s. 23 w.	8
Norfolk, Va	13	33	21	9	s. 31 e.	23
Richmond, Va	14	35	18	6	s. 30 e.	24
Wytheville, Va	12	10	22	27	n. 68 w.	5
South Atlantic States.						
Asheville, N. C	16	24	24	13	s. 54 e.	14
Charlotte, N. C	11	23	21	18	s. 14 e.	12
Hatteras, N. C	18	25	22	17	s. 36 e.	9
Raleigh, N. C	15	29	17	15	s. 8 e.	14
Wilmington, N. C	17	25	21	17	s. 27 e.	9
Charleston, S. C	15	27	24	7	s. 55 e.	21
Columbia, S. C	15	30	22	11	s. 36 e.	19
Augusta, Ga	17	22	27	11	s. 73 e.	17
Savannah, Ga	16	22	19	13	s. 45 e.	8
Jacksonville, Fla	16	23	25	13	s. 60 e.	14
Florida Peninsula.						
Jupiter, Fla	5	34	8	30	s. 37 w.	36
Key West, Fla	10	23	29	14	s. 49 e.	20
Tampa, Fla	29	17	23	18	n. 59 e.	6
Eastern Gulf States.						
Atlanta, Ga	13	21	28	12	s. 63 e.	18
Macon, Ga.†	7	10	15	4	s. 75 e.	11
Pensacola, Fla.†	15	3	10	9	n. 5 e.	12
Birmingham, Ala.†	7	11	14	8	s. 56 e.	7
Mobile, Ala	22	23	13	14	s. 45 w.	1
Montgomery, Ala	13	18	30	12	s. 74 e.	19
Meridian, Miss.†	6	12	11	7	s. 34 e.	7
Vicksburg, Miss	21	15	26	13	n. 65 e.	14
New Orleans, La	12	29	17	19	s. 7 w.	17
Western Gulf States.						
Shreveport, La	20	25	21	8	s. 59 e.	14
Fort Smith, Ark	11	14	35	6	s. 72 e.	10
Little Rock, Ark	19	24	17	15	s. 22 e.	5
Corpus Christi, Tex	7	40	26	1	s. 34 e.	40
Fort Worth, Tex	8	29	27	10	s. 39 e.	27
Galveston, Tex	8	34	9	21	s. 25 w.	29
Palestine, Tex	19	26	24	10	s. 63 e.	16
San Antonio, Tex	11	24	41	4	s. 71 e.	39
Taylor, Tex.†	8	16	5	9	s. 27 w.	9
Ohio Valley and Tennessee.						
Chattanooga, Tenn	9	30	16	17	s. 3 w.	21
Knoxville, Tenn	24	19	18	17	n. 11 e.	5
Memphis, Tenn	17	24	20	11	s. 52 e.	11
Nashville, Tenn	11	21	22	20	s. 11 e.	10
Lexington, Ky.†	6	16	10	6	s. 22 e.	11
Louisville, Ky	19	24	17	16	s. 18 e.	3
Evansville, Ind.†	10	12	9	6	s. 56 e.	4
Indianapolis, Ind	19	27	18	12	s. 37 e.	10
Cincinnati, Ohio	17	23	27	15	s. 63 e.	13
Columbus, Ohio	12	27	24	12	s. 39 e.	19
Pittsburg, Pa	25	20	12	19	n. 54 w.	9
Parkersburg, W. Va	17	27	9	21	s. 50 w.	16
Elkins, W. Va	24	20	6	25	n. 78 w.	19
Lower Lake Region.						
Buffalo, N. Y	12	26	17	22	s. 20 w.	15
Oswego, N. Y	15	29	14	17	s. 12 w.	14
Rochester, N. Y	17	21	12	26	s. 74 w.	15
Syracuse, N. Y	17	31	8	15	s. 27 w.	16
Erie, Pa	10	27	18	16	s. 7 e.	17
Cleveland, Ohio	16	25	24	13	s. 51 e.	14
Sandusky, Ohio†	6	11	7	13	s. 50 w.	8
Toledo, Ohio	18	21	18	19	s. 18 w.	3
Detroit, Mich	21	15	15	21	n. 45 w.	8
Upper Lake Region.						
Alpena, Mich	23	17	14	21	n. 49 w.	9
Escanaba, Mich	21	23	12	17	s. 68 w.	5
Grand Rapids, Mich	20	17	19	20	n. 18 w.	3
Houghton, Mich.†	5	3	13	14	n. 27 w.	2
Marquette, Mich	22	13	12	25	n. 55 w.	16
Port Huron, Mich	20	23	14	15	s. 18 w.	3
Sault Ste. Marie, Mich	17	11	17	31	n. 67 w.	15
Chicago, Ill	19	22	23	16	s. 67 e.	8
Milwaukee, Wis	17	20	19	22	s. 45 w.	4
Green Bay, Wis	10	27	19	21	s. 7 w.	17
Duluth, Minn	25	7	22	24	n. 6 w.	18

Stations.	Component direction from—				Resultant.	
	N.	S.	E.	W.	Direction from—	Duration.
North Dakota.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
Moorhead, Minn	19	23	17	19	s. 27 w.	4
Bismarck, N. Dak	25	12	23	17	n. 25 e.	14
Devils Lake, N. Dak	15	17	18	27	s. 77 w.	9
Williston, N. Dak	23	20	22	15	n. 67 e.	8
Upper Mississippi Valley.						
Minneapolis, Minn.*	9	10	11	9	s. 63 e.	2
St. Paul, Minn	15	24	25	13	s. 53 e.	15
La Crosse, Wis.†	9	15	8	3	s. 40 e.	8
Madison, Wis	11	24	20	20	s.	13
Charles City, Iowa	12	27	19	17	s. 8 e.	15
Davenport, Iowa	10	20	20	23	s. 17 w.	10
Des Moines, Iowa	13	30	14	22	s. 25 w.	19
Dubuque, Iowa	11	28	16	18	s. 7 w.	17
Keokuk, Iowa	12	26	21	18	s. 12 e.	14
Cairo, Ill	18	28	15	15	s.	10
La Salle, Ill.†	11	8	12	10	n. 34 e.	4
Peoria, Ill	7	15	10	7	s. 21 e.	8
Springfield, Ill	11	29	19	17	s. 6 e.	18
Hannibal, Mo.†	4	13	7	12	s. 29 w.	10
St. Louis, Mo	12	23	20	20	s.	11
Missouri Valley.						
Columbia, Mo.*	7	13	9	6	s. 27 e.	7
Kansas City, Mo	12	32	24	9	s. 37 e.	25
Springfield, Mo	12	33	16	12	s. 11 e.	21
Topeka, Kans.*	3	17	11	4	s. 27 e.	16
Lincoln, Nebr	7	41	14	12	s. 3 e.	34
Omaha, Nebr	9	37	15	18	s. 6 w.	28
Valentine, Nebr	21	16	18	21	n. 31 w.	6
Sioux City, Iowa†	9	12	15	6	s 72 e.	10
Pierre, S. Dak	15	23	28	14	s. 60 e.	16
Huron, S. Dak	21	22	24	16	s. 83 e.	8
Yankton, S. Dak.†	9	9	13	11	e.	2
Northern Slope.						
Havre, Mont	18	13	18	28	n. 63 w.	11
Miles City, Mont	11	23	20	21	s. 5 w.	12
Helena, Mont	10	24	6	41	s. 68 w.	38
Kalispell, Mont	14	14	4	40	w.	36
Rapid City, S. Dak	15	12	17	30	n. 77 w.	13
Cheyenne, Wyo	25	17	9	26	n. 65 w.	19
Lander, Wyo	16	13	14	29	n. 79 w.	15
Yellowstone Park, Wyo	8	38	3	28	s. 40 w.	39
North Platte, Nebr	12	23	23	15	s. 36 e.	14
Middle Slope.						
Denver, Colo	16	31	10	16	s. 22 w.	16
Pueblo, Colo	22	12	11	32	n. 65 w.	23
Concordia, Kans	7	37	19	9	s. 18 e.	32
Dodge, Kans	10	33	26	10	s. 35 e.	28
Wichita, Kans	6	41	17	7	s. 16 e.	36
Oklahoma, Okla	5	40	27	7	s. 30 e.	40
Southern Slope.						
Abilene, Tex	8	37	20	4	s. 29 e.	33
Amarillo, Tex	4	41	18	10	s. 12 e.	38
Roswell, N. Mex.	11	28	8	29	s. 51 w.	27
Southern Plateau.						
El Paso, Tex	18	11	36	11	n. 74 e.	26
Santa Fe, N. Mex	22	15	33	13	n. 71 e.	21
Flagstaff Ariz	33	9	1	30	n. 50 w.	38
Phoenix, Ariz	15	11	26	23	n. 37 e.	5
Yuma, Ariz	9	25	16	26	s. 32 w.	19
Independence, Cal	14	26	19	22	s. 14 w.	12
Middle Plateau.						
Carson City, Nev	9	25	4	39	s. 65 w.	38
Winnemucca, Nev	20	20	16	29	w.	13
Modena, Utah	4	22	4	44	s. 66 w.	44
Salt Lake City, Utah	22	19	25	14	n. 75 e.	11
Durango, Colo	34	3	5	34	n. 43 w.	42
Grand Junction, Colo	23	10	22	24	n. 9 w.	13
Northern Plateau.						
Baker City, Oreg	20	28	13	22	s. 48 w.	12
Boise, Idaho	17	21	13	28	s. 75 w.	16
Lewiston, Idaho†	1	3	26	3	s. 85 e.	23
Pocatello, Idaho	6	23	27	20	s. 22 e.	18
Spokane, Wash	11	29	9	28	s. 47 w.	26
North Pacific Coast Region.						
North Head, Wash	30	13	6	30	n. 55 w.	29
Port Crescent, Wash.*	4	5	3	24	s. 87 w.	21
Seattle, Wash	16	17	13	25	s. 85 w.	12
Tacoma, Wash	23	13	4	32	n. 70 w.	30
Tatoosh Island, Wash	3	29	9	32	s. 42 w.	35
Portland, Oreg	27	14	9	29	n. 57 w.	24
Roseburg, Oreg	30	1	15	26	n. 21 w.	31
Middle Pacific Coast Region.						
Eureka, Cal	28	14	4	30	n. 62 w.	30
Mount Tamalpais, Cal	23	7	1	48	n. 71 w.	50
Red Bluff, Cal	17	36	4	12	s. 23 w.	21
Sacramento, Cal	3	51	15	4	s. 13 e.	49
San Francisco, Cal	0	14	0	54	s. 75 w.	56
South Pacific Coast Region.						
Fresno, Cal	39	1	0	41	n. 47 w.	56
Los Angeles, Cal	1	20	9	43	s. 61 w.	39
San Diego, Cal	20	7	2	44	n. 73 w.	44
San Luis Obispo, Cal	25	13	4	32	n. 67 w.	30
West Indies						
Grand Turk, W. I	0	7	27	0	s. 75 e.	28
Hamilton, Bermuda	4	35	10	31	s. 34 w.	37
Havana, Cuba†	0	6	27	0	s. 78 e.	28
San Juan, Porto Rico	1	20	50	1	s. 69 e.	53

* From observations at 8 p. m. only. † From observations at 8 a. m. only.

TABLE IV.—*Accumulated amounts of precipitation for each 5 minutes, for storms in which the rate of fall equaled or exceeded 0.25 in any 5 minutes, or 0.75 in 1 hour during August, 1905, at all stations furnished with self-registering gages.*

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive began.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
	1	2	3	4	5	6	7														
Albany, N. Y	6	4:10 p. m.	5:32 p. m.	0.64	4:29 p. m.	4:54 p. m.	T.	0.26	0.36	0.40	0.55	0.60									
Alpena, Mich	19	3:00 a. m.	10:50 a. m.	1.79	3:56 a. m.	4:15 a. m.	0.30	0.10	0.24	0.36	0.40										
Amarillo, Tex	1–2			0.30									0.16								
Asheville, N. C	7			0.41														0.40			
Atlanta, Ga	23	10:56 a. m.	12:00 m.	1.04	11:14 a. m.	11:28 a. m.	0.17	0.31	0.69	0.82											
Atlantic City, N. J	9	D. N.	5:55 p. m.	2.48	9:03 a. m.	9:53 a. m.	0.74	0.18	0.21	0.35	0.43	0.46	0.50	0.53	0.57	0.60	0.76				
Augusta, Ga	7	9:50 p. m.	10:55 p. m.	0.97	10:10 p. m.	10:36 p. m.	0.01	0.20	0.26	0.42	0.62	0.94	0.96								
Do	8	4:49 p. m.	8:55 p. m.	1.27	5:31 p. m.	6:51 p. m.	0.02	0.22	0.50	0.63	0.69	0.71	0.74	0.82	1.03	1.35	1.45	1.56	1.86		
Baltimore, Md	25	10:00 a. m.	11:55 p. m.	1.87	10:05 a. m.	10:40 a. m.	0.01	0.14	0.28	0.62	0.91	1.04	1.14	1.20							
Binghamton, N. Y	11	2:03 p. m.	6:07 p. m.	0.97	2:03 p. m.	2:23 p. m.	0.00	0.23	0.31	0.44	0.59										
Birmingham, Ala	25	8:40 a. m.	12:51 p. m.	2.80	8:40 a. m. 10:15 a. m. 11:24 a. m.	9:05 a. m. 10:35 a. m. 11:44 a. m.	0.00 0.98 1.89	0.22 0.20 0.32	0.56 0.47 0.47	0.72 0.66 0.74	0.79 0.77 0.83	0.84									
Bismarck, N. Dak	30–31			0.38														0.34			
Block Island, R. I	15	7:47 a. m.	12:55 p. m.	1.17	12:10 p. m.	12:37 p. m.	0.48	0.15	0.28	0.41	0.53	0.64									
Boise, Idaho	26			T.																	
Boston, Mass	12	11:45 a. m.	12:50 p. m.	1.26	11:47 a. m.	12:45 p. m.	T.	0.06	0.16	0.27	0.56	0.77	0.83	0.83	0.84	0.94	1.05	1.26			
Buffalo, N. Y	6	12:40 p. m.	3:00 p. m.	1.64	2:14 p. m.	2:55 p. m.	0.53	0.07	0.40	0.76	0.99	1.03	1.05	1.07	1.12						
Cairo, Ill	7	6:31 p. m.	7:03 p. m.	0.54	6:33 p. m.	6:53 p. m.	0.02	0.20	0.35	0.46	0.49										
Do	22	1:52 p. m.	4:25 p. m.	0.74	2:27 p. m.	2:47 p. m.	0.11	0.11	0.34	0.47	0.54										
Charles City, Iowa	12	2:36 p. m.	3:30 p. m.	1.32	2:44 p. m.	3:20 p. m.	0.01	0.14	0.40	0.66	0.84	0.96	1.09	1.25							
Do	24	5:10 a. m.	7:02 p. m.	1.34	5:12 p. m.	5:52 a. m.	0.01	0.06	0.08	0.19	0.41	0.68	0.96	1.15	1.22						
Charleston, S. C	10	4:53 p. m.	D. N.	0.97	6:36 p. m.	6:51 p. m.	0.16	0.12	0.44	0.56											
Charlotte, N. C	9–10	10:15 p. m.	7:00 a. m.	1.97	4:40 a. m.	5:15 a. m.	0.79	0.12	0.21	0.31	0.40	0.59	0.66	0.76							
Chattanooga, Tenn	17			0.91								0.49									
Cheyenne, Wyo	30	5:40 p. m.	7:05 p. m.	1.29	6:18 p. m.	6:39 p. m.	0.02	0.24	0.40	0.88	1.13	1.18									
Chicago, Ill	5	6:04 a. m.	6:55 a. m.	1.26	6:06 a. m.	6:31 a. m.	T.	0.51	0.86	0.98	1.11	1.20									
Cincinnati, Ohio	19	11:40 a. m.	1:35 p. m.	0.80	12:17 p. m.	1:07 p. m.	0.65	0.15	0.37	0.39	0.41	0.47	0.48	0.48	0.57	0.62	0.71				
Cleveland, Ohio	14	6:05 p. m.	D. N.	1.16	6:47 p. m.	7:10 p. m.	0.01	0.16	0.39	0.46	0.50	0.57									
Do	19	1:41 p. m.	4:57 p. m.	1.26	2:54 p. m.	3:26 p. m.	0.19	0.19	0.14	0.20	0.39	0.58	0.63	0.74	0.82						
Columbia, Mo	14	3:11 a. m.	5:03 a. m.	0.89	4:32 a. m.	4:47 a. m.	0.13	0.30	0.64	0.75											
Do	22	2:20 a. m.	11:23 a. m.	2.44	5:35 a. m.	6:30 a. m.	0.12	0.06	0.26	0.60	1.02	1.38	1.62	1.74	1.80	1.83	1.90				
Columbia, S. C	8–9	8:42 p. m.	D. N.	2.20	10:02 p. m.	11:42 p. m.	0.12	0.10	0.10	0.15	0.35	0.58	0.74	0.85	1.00	1.05	1.15	1.40	1.68	1.94	
Do	14	11:13 a. m.	12:50 p. m.	1.23	11:15 a. m.	12:00 m.	T.	0.10	0.21	0.28	0.38	0.51	0.82	0.99	1.06	1.19					
Columbus, Ohio	5	5:20 p. m.	9:30 p. m.	1.72	5:32 p. m.	6:14 p. m.	0.01	0.09	0.16	0.23	0.31	0.42	0.70	0.75	0.89						
Do	14	3:30 p. m.	4:20 p. m.	0.72	3:52 p. m.	4:08 p. m.	0.04	0.15	0.43	0.68											
Concord, N. H	15–16			1.04														0.35			
Corpus Christi, Tex	31			0.06																	
Davenport, Iowa	13			0.67					0.36												
Denver, Colo	11			0.52														0.48			
Des Moines, Iowa	1	9:00 p. m.	11:20 p. m.	1.19	9:15 p. m.	9:48 p. m.	0.01	0.07	0.28	0.51	0.68	0.87	0.97								
Do	23–24	11:50 p. m.	3:00 a. m.	1.02	11:59 p. m.	12:35 a. m.	0.01	0.09	0.21	0.38	0.46	0.61	0.86	0.91							
Detroit, Mich	14–15			1.89														0.48			
Dodge, Kans	15			0.92														*			
Dubuque, Iowa	13			0.74														0.36			
Duluth, Minn	17–18			1.44														0.50			
Eastport, Me	6			0.74														0.47			
Elkins, W. Va	14	12:45 p. m.	2:00 p. m.	0.74	1:35 p. m.	1:50 p. m.	0.09	0.08	0.40	0.63											
Erie, Pa	5	12:46 p. m.	2:59 p. m.	0.89	12:58 p. m.	1:45 p. m.	0.01	0.10	0.25	0.49	0.50	0.50	0.50	0.52	0.60	0.78	0.85				
Escanaba, Mich	23			0.41														0.38			
Evansville, Ind	13–14			0.78							0.40										
Fort Smith, Ark	19	4:50 a. m.	7:05 a. m.	1.03	5:27 a. m.	5:41 a. m.	0.05	0.27	0.61	0.85											
Fort Worth, Tex	13			0.53														0.26			
Galveston, Tex	8			0.84							0.58										
Grand Rapids, Mich	4	D. N.	7:10 a. m.	2.12	12:55 a. m.	1:20 a. m.	0.07	0.07	0.23	0.55	0.66	0.75									
Green Bay, Wis	20–21	10:50 p. m.	3:30 a. m.	1.20	11:11 p. m.	11:30 p. m.	0.03	0.18	0.51	0.62	0.66										
Hannibal, Mo	22			0.98						0.53											
Harrisburg, Pa	24			0.67						0.62											
Hartford, Conn	24	3:05 p. m.	5:40 p. m.	1.61	3:38 p. m.	4:41 p. m.	0.14	0.05	0.14	0.28	0.51	0.64	0.93	0.96	1.01	1.16	1.19	1.35	1.42		
Hatteras, N. C	25	7:15 a. m.	8:05 a. m.	0.78	7:17 a. m.	7:47 a. m.	0.01	0.10	0.22	0.36	0.52	0.66	0.77								
Huron, S. Dak	1	12:27 p. m.	2:15 p. m.	1.30	12:44 p. m.	1:55 p. m.	0.03	0.06	0.11	0.20	0.26	0.35	0.39	0.47	0.55	0.63	0.83	1.02	1.22		
Indianapolis, Ind	14			0.81														0.48			
Jacksonville, Fla	4–5	8:15 a. m.	3:07 a. m.	6.18	10:27 a. m. 1:19 a. m.	12:27 p. m. 2:39 a. m.	0.29 4.47	0.14 0.08	0.33 0.17	0.35 0.27	0.39 0.30	0.68 0.35	0.83 0.42	0.95 0.46	0.96 0.50	1.08 0.55	1.27 0.58	1.56 0.79	2.09 1.54	2.27	2.58
Do	18–19	10:15 p. m.	10:40 a. m.	1.53	12:41 a. m.	1:20 a. m.	0.44	0.13	0.29	0.42	0.47	0.56	0.69	0.75	0.81						
Jupiter, Fla	2	11:22 a. m.	6:10 p. m.	1.71	11:25 a. m.	11:50 a. m.	T.	0.19	0.43	0.80	0.95	1.05									
Do	6	12:50 p. m.	7:30 p. m.	1.52	3:40 p. m.	4:00 p. m.	0.55	0.17	0.39	0.66	0.81										
Do	18	12:40 p. m.	1:38 p. m.	0.79	12:47 p. m.	1:22 p. m.	T.	0.12	0.17	0.22	0.28	0.42	0.61	0.78							
Do	25	1:50 p. m.	5:50 p. m.	1.30	1:55 p. m.	2:25 p. m.	0.01	0.12	0.41	0.64	0.92	1.02	1.10								
Kansas City, Mo	2	6:30 p. m.	9:50 p. m.	2.04	8:20 p. m.	9:18 p. m.	0.37	0.07	0.15	0.19	0.27	0.36	0.50	0.60	0.70	0.92	1.31	1.64			
Key West, Fla	14	5:35 p. m.	9:15 p. m.	0.96	5:38 p. m.	5:58 p. m.	T.	0.27	0.52	0.62	0.68										
Knoxville, Tenn	4	2:48 p. m.	5:20 p. m.	2.47	3:59 p. m.	4:49 p. m.	0.45	0.08	0.13	0.23	0.29	0.41	0.83	1.29	1.65	1.89	1.99				
La Crosse, Wis	4–5	11:22 p. m.	D. N.	2.19	11:25 p. m.	1:05 a. m.	0.01	0.22	0.38	0.40	0.41	0.42	0.43	0.44	0.52	0.67	0.95	1.24	1.93	2.16	
Do	8	5:15 p. m.	7:15 p. m.	2.06	5:20 p. m.	6:34 p. m.	0.01	0.18	0.35	0.51	0.64	0.81	0.95	1.06	1.19	1.35	1.59	1.74	2.02		
Do	24	D. N.	6:00 a. m.	1.53	3:20 a. m.	4:40 a. m.	0.23	0.05	0.09	0.16	0.24	0.30	0.46	0.54	0.62	0.66	0.69	0.76	1.12		
La Salle, Ill	12			0.78								0.58									
Lexington, Ky	23	D. N.	5:50 a. m.	1.83	2:47 a. m.	3:20 a. m.	0.05	0.13	0.29	0.54	0.99	1.19	1.35	1.48							
Lincoln, Nebr	17–18	8:00 p. m.	6:50 a. m.	3.23	10:15 p. m.	11:15 p. m.	0.83	0.09	0.18	0.25	0.41	0.61	0.79	0.97	1.15	1.31	1.43	1.61			
Little Rock, Ark	15–16	8:10 p. m.	D. N.	1.81	9:02 p. m.	10:22 p. m.	0.03	0.05	0.21	0.24	0.24	0.25	0.32	0.38	0.50	0.58	0.61	0.79	1.12		
Do	22	5:30 p. m.	6:10 p. m.	0.73	5:35 p. m.	5:55 p. m.	T.	0.13	0.36	0.66	0.71										
Los Angeles, Cal	†																				
Louisville, Ky	22–23	10:10 p. m.	6:00 a. m.	1.74	12:12 a. m.	12:55 a. m.	0.25	0.07	0.34	0.43	0.57	0.62	0.72	0.85	0.95	1.00					
Lynchburg, Va	14	5:15 p. m.	5:55 p. m.	0.82	5:21 p. m.	5:35 p. m.	0.01	0.34	0.67	0.73											
Do	25	2:45 p. m.	5:20 p. m.	1.25	3:02 p. m.	3:40 p. m.	0.02	0.17	0.34	0.50	0.79	1.04	1.08								
Macon, Ga	12	6:35 p. m.	9:40 p. m.	1.32	6:35 p. m.	7:51 p. m.	0.00	0.05	0.11	0.19	0.26	0.30	0.34	0.44	0.59	0.72	0.77	0.84	1.08		
Do	23	12:57 p. m.	4:25 p. m.	1.06	1:10 p. m.	1:29 p. m.	0.05	0.19	0.53	0.68	0.79										
Madison, Wis	18			0.60					0.32												
Memphis, Tenn	9–10	9:15 p. m.	5:55 a. m.	2.54	1:40 a. m.	2:35 a. m.	0.06	0.12	0.24	0.46	0.77	1.02	1.25	1.44	1.57	1.69	1.79	1.91			
Meridian, Miss	14	6:58 p. m.	8:15 p. m.	0.77	7:06 p. m.	7:34 p. m.	0.02	0.14	0.40	0.50	0.54	0.62	0.71								
Do	25	4:22 p. m.	5:28 p. m.	0.80	4:27 p. m.	4:48 p. m.	0.01	0.07	0.24	0.41	0.64	0.68	0.72	0.77							
Milwaukee, Wis	5			0.93							0.39										
Minneapolis, Minn	17			1.62							0.48										
Modena, Utah	9	2:43 p. m.	7:25 p. m.	1.34	2:47 p. m.	3:22 p. m.	T.	0.13	0.31	0.60	0.78	0.94	1.02	1.12							
Montgomery, Ala	9	12:54 p. m.	4:00 p. m.	1.25	1:18 p. m.	1:48 p. m.	0.01	0.09	0.28	0.58	0.85	1.00	1.13								
Mount Weather, Va	25			1.62									0.51								
Nantucket, Mass	15–16	9:50 a. m.	1:20 a. m.	2.13	1:47 p. m.	3:14 p. m.	0.54	0.06	0.15	0.25	0.30	0.39	0.46	0.46	0.47	0.48	0.56	0.71	1.19	1.31	
Nashville, Tenn	25	3:25 a. m.	4:15 a. m.	1.07	3:29 a. m.	3:45 a. m.	0.01	0.34	0.66	0.93											
New Haven, Conn	13	4:03 p. m.	6:20 p. m.	2.06	4:08 p. m.	5:28 p. m.	0.01	0.33	0.49	0.59	0.90	1.09	1.29	1.50	1.61	1.65	1.67	1.80	1.97		
Do	24–25	5:27 p. m.	1:20 p. m.	2.11	6:34 p. m.	7:39 p. m.	0.25	0.23	0.36	0.38	0.43	0.64	0.73	0.84	0.99	0.99	0.99	1.07			
New Orleans, La	13	11:10 a. m.	12:15 p. m.	0.72	11:17 a. m.	11:40 a. m.	0.03	0.26	0.29	0.36	0.52	0.60									
New York, N. Y	13	12:48 p. m.	1:40 p. m.	0.98	12:59 p. m.	1:38 p. m.	T.	0.10	0.24	0.33	0.42	0.59	0.78	0.90	0.98						

TABLE IV.—*Accumulated amounts of precipitation for each 5 minutes, etc.*—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive began.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
	1	2	3	4	5	6	7														
Norfolk, Va	8	1:50 p. m.	2:40 p. m.	0.92	1:52 p. m.	2:21 p. m.	0.01	0.19	0.50	0.67	0.76	0.83	0.89	.....	.....	.....	.....	.....	.....	.....	.....
Do	14	1:39 p. m.	1:57 p. m.	0.62	1:41 p. m.	1:48 p. m.	0.01	0.43	0.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Northfield, Vt	15–16	.....	.....	1.64	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.37	.....	.....	.....
North Head, Wash	16	.....	.....	0.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.12	.....	.....	.....
Oklahoma, Okla	6	5:25 p. m.	7:50 p. m.	1.17	6:18 p. m.	6:45 p. m.	0.05	0.32	0.40	0.55	0.72	0.85	0.97	.....	.....	.....	.....	.....	.....	.....	.....
Do	13	3:30 a. m.	7:20 p. m.	1.53	4:01 a. m.	4:51 a. m.	0.14	0.10	0.15	0.29	0.46	0.61	0.71	0.75	0.80	0.87	0.93	.....	.....	.....	.....
Do	15	2:45 a. m.	8:20 a. m.	1.26	7:11 a. m.	8:01 a. m.	0.06	0.11	0.29	0.41	0.56	0.72	0.80	0.82	0.86	1.02	1.19	.....	.....	.....	.....
Omaha, Nebr	1	2:45 p. m.	6:15 p. m.	0.75	4:39 p. m.	4:57 p. m.	0.03	0.27	0.54	0.66	0.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	22	12:15 a. m.	3:10 a. m.	0.91	12:19 a. m.	12:59 a. m.	T.	0.06	0.13	0.23	0.30	0.40	0.49	0.57	0.62	.....	.....	.....	.....	.....	.....
Palestine, Tex	8	.....	.....	0.53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.25	.....	.....	.....
Parkersburg, W. Va	10–11	6:40 p. m.	12:40 a. m.	1.05	11:25 p. m.	11:45 p. m.	0.20	0.10	0.46	0.68	0.74	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pensacola, Fla	2–3	9:25 p. m.	2:15 a. m.	2.12	10:53 p. m.	12:08 a. m.	0.29	0.23	0.32	0.44	0.45	0.47	0.48	0.51	0.53	0.67	0.79	1.01	1.40	.....	.....
Do	3	10:45 a. m.	1:20 p. m.	1.12	11:07 a. m.	12:17 p. m.	0.01	0.19	0.29	0.31	0.40	0.54	0.64	0.66	0.68	0.71	0.73	0.86	1.09	.....	.....
Do	17	11:45 a. m.	12:55 p. m.	0.95	11:57 a. m.	12:15 p. m.	0.01	0.12	0.47	0.84	0.94	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Peoria, Ill	13–14	.....	.....	0.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.22	.....	.....	.....
Philadelphia, Pa	5	2:45 p. m.	3:19 p. m.	1.21	2:53 p. m.	3:19 p. m.	0.02	0.37	0.69	0.89	0.93	1.14	1.19	.....	.....	.....	.....	.....	.....	.....	.....
Do	6	9:21 a. m.	10:45 a. m.	2.38	9:25 a. m.	10:09 a. m.	0.01	0.11	0.29	0.55	0.96	1.45	1.90	2.10	2.19	2.32	.....	.....	.....	.....	.....
Do	13	4:45 p. m.	7:20 p. m.	1.00	4:46 p. m.	5:15 p. m.	0.01	0.14	0.15	0.43	0.74	0.85	0.92	.....	.....	.....	.....	.....	.....	.....	.....
Do	25	9:51 a. m.	9:45 p. m.	2.21	11:23 a. m.	12:05 p. m.	0.71	0.06	0.17	0.31	0.46	0.58	0.73	0.92	0.99	.....	.....	.....	.....	.....	.....
Pittsburg, Pa	11	6:10 p. m.	8:10 p. m.	1.12	6:38 p. m.	7:01 p. m.	0.20	0.20	0.44	0.56	0.77	0.87	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland, Me	15–16	.....	.....	1.39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.25	.....	.....	.....
Portland, Oreg	16	.....	.....	0.06	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.05	.....	.....	.....
Pueblo, Colo	19	.....	.....	0.34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.26	.....	.....	.....
Raleigh, N. C	8–9	9:15 p. m.	8:10 a. m.	2.82	11:23 p. m.	1:15 a. m.	0.16	0.17	0.27	0.37	0.40	0.42	0.47	0.60	0.69	0.77	0.82	1.00	1.20	1.42	1.62
Do	12	6:40 p. m.	7:30 p. m.	0.72	6:45 p. m.	7:20 p. m.	0.02	0.05	0.15	0.30	0.45	0.55	0.64	0.70	.....	.....	.....	.....	.....	.....	.....
Richmond, Va	13	.....	.....	0.78	.....	.....	.....	.....	.....	0.37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rochester, N. Y	11	4:54 a. m.	4:15 p. m.	2.69	{ 5:21 a. m.	6:11 a. m.	0.08	0.07	0.25	0.35	0.46	0.53	0.55	0.60	0.70	0.74	0.80	.....	.....	.....	.....
					{ 6:11 a. m.	7:26 a. m.	.....	0.83	0.92	1.05	1.11	1.14	1.20	1.27	1.38	1.55	1.69	1.89	2.00	.....	.....
Sacramento, Cal	21	.....	.....	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Louis, Mo	2–3	.....	.....	1.23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.74	.....	.....	.....
St. Paul, Minn	4	7:50 p. m.	11:49 p. m.	1.72	7:55 p. m.	8:40 p. m.	T.	0.12	0.21	0.25	0.28	0.29	0.31	0.40	0.63	1.08	1.13	1.18	.....	.....	.....
Salt Lake City, Utah	22	.....	.....	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.23	.....	.....	.....
San Antonio, Tex	3	.....	.....	0.32	.....	.....	.....	.....	0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Diego, Cal	†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sandusky, Ohio	12	.....	.....	0.39	.....	.....	.....	.....	0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Francisco, Cal	3	.....	.....	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savannah, Ga	12	11:54 a. m.	2:30 p. m.	1.01	12:34 p. m.	12:42 p. m.	0.07	0.41	0.53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	13	10:11 a. m.	11:50 a. m.	0.86	10:16 a. m.	10:26 a. m.	0.04	0.26	0.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scranton, Pa	11	7:05 p. m.	10:30 p. m.	1.10	8:20 p. m.	9:02 p. m.	0.11	0.08	0.24	0.26	0.27	0.42	0.59	0.74	0.86	0.92	.....	.....	.....	.....	.....
Do	15	4:50 p. m.	6:50 p. m.	1.12	5:57 p. m.	6:18 p. m.	0.09	0.32	0.68	0.85	0.95	1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Seattle, Wash	16	.....	.....	0.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.12	.....	.....	.....
Shreveport, La	30	.....	.....	0.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.37	.....	.....	.....
Spokane, Wash	1	.....	.....	0.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Springfield, Ill	3	7:26 a. m.	1:18 p. m.	1.27	8:28 a. m.	9:13 a. m.	0.01	0.08	0.24	0.49	0.65	0.76	0.81	0.92	0.98	1.04	.....	.....	.....	.....	.....
Do	13–14	6:21 p. m.	1:27 a. m.	2.07	11:02 p. m.	11:37 p. m.	0.76	0.07	0.24	0.36	0.47	0.65	0.75	0.86	.....	.....	.....	.....	.....	.....	.....
Springfield, Mo	13	11:11 a. m.	3:55 p. m.	1.99	12:00 m.	‡	0.06	0.07	0.24	0.45	0.59	0.66	0.78	0.93	1.04	1.12	1.14	1.22	.....	.....	.....
Do	14	11:14 a. m.	2:30 p. m.	1.32	11:14 a. m.	11:49 a. m.	0.00	0.28	0.59	0.79	0.88	0.89	0.94	1.05	.....	.....	.....	.....	.....	.....	.....
Syracuse, N. Y	30	.....	.....	1.62	.....	.....	.....	.....	0.57	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tampa, Fla	7	4:35 a. m.	10:50 a. m.	2.06	4:44 a. m.	5:44 a. m.	0.01	0.24	0.51	0.59	0.64	0.66	0.67	0.67	0.68	0.79	0.95	1.19	.....	.....	.....
Do	12	12:04 p. m.	4:10 p. m.	1.09	1:53 p. m.	2:13 p. m.	0.13	0.22	0.48	0.68	0.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	22	2:10 p. m.	3:40 p. m.	1.32	2:32 p. m.	2:58 p. m.	0.03	0.15	0.53	0.91	1.07	1.16	1.19	1.24	.....	.....	.....	.....	.....	.....	.....
Taylor, Tex	7	.....	.....	0.50	.....	.....	.....	.....	0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Toledo, Ohio	14	11:10 a. m.	7:45 p. m.	1.38	5:39 p. m.	5:54 p. m.	0.59	0.09	0.38	0.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Topeka, Kans	18	3:06 a. m.	5:45 a. m.	1.23	3:13 a. m.	3:37 a. m.	0.02	0.25	0.40	0.55	0.63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valentine, Nebr	1	.....	.....	0.64	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.23	.....	.....	.....
Vicksburg, Miss	25	7:03 p. m.	9:00 p. m.	1.12	7:04 p. m.	7:34 p. m.	0.01	0.27	0.48	0.57	0.77	0.97	1.03	.....	.....	.....	.....	.....	.....	.....	.....
Washington, D. C	9	4:30 a. m.	11:58 a. m.	2.71	8:00 a. m.	10:00 a. m.	0.24	0.10	0.20	0.40	0.60	0.75	0.96	1.08	1.13	1.18	1.33	1.42	1.63	1.90	2.14
Do	14	7:32 p. m.	9:20 p. m.	0.95	7:36 p. m.	8:00 p. m.	T.	0.36	0.60	0.80	0.91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	23	10:24 a. m.	11:08 a. m.	1.11	10:27 p. m.	10:57 a. m.	T.	0.11	0.20	0.43	0.67	1.06	1.11	.....	.....	.....	.....	.....	.....	.....	.....
Do	25	1:13 p. m.	6:45 p. m.	2.81	1:25 p. m.	3:25 p. m.	0.01	0.18	0.38	0.54	0.64	0.76	0.90	0.99	1.08	1.20	1.32	1.48	1.78	2.02	2.26
Wichita, Kans	12	.....	.....	0.91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.18	.....	.....	.....
Williston, N. Dak	25	.....	.....	0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.20	.....	.....	.....
Wilmington, N. C	12	.....	.....	0.58	.....	.....	.....	.....	.....	0.41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wytheville, Va	24	.....	.....	0.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.27	.....	.....	.....
Yankton, S. Dak	20	.....	.....	0.74	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.72	.....	.....	.....
Camaguey, Cuba	16	6:25 p. m.	D. N.	3.21	6:43 p. m.	7:53 p. m.	0.04	0.28	0.53	0.87	1.17	1.38	1.60	1.83	2.13	2.42	2.65	2.95	3.09	.....	.....
Havana, Cuba	20	12:58 p. m.	2:15 p. m.	1.01	1:22 p. m.	1:47 p. m.	T.	0.17	0.40	0.61	0.82	0.97	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	26	12:25 p. m.	4:20 p. m.	1.62	12:43 p. m.	1:52 p. m.	0.01	0.20	0.29	0.34	0.52	0.63	0.84	0.95	0.98	1.05	1.12	1.23	1.53	.....	.....
San Juan, Porto Rico	3	2:10 p. m.	5.10 p. m.	1.37	{ 2:18 p. m.	2:36 p. m.	0.01	0.11	0.19	0.44	0.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
					{ 3:40 p. m.	4:05 p. m.	0.62	0.09	0.12	0.24	0.37	0.51	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Self-register not working † No precipitation during the month. ‡ Unknown; selfregister failed to record after 1:00 p. m.

TABLE V.—*Data furnished by the Canadian Meteorological Service, August, 1905.*

Stations.	Pressure, in inches.			Temperature.				Precipitation.			Stations.	Pressure, in inches.			Temperature.				Precipitation.		
	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean.	Departure from normal.	Mean maximum.	Mean minimum.	Total.	Departure from normal.	Total snowfall.		Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean.	Departure from normal.	Mean maximum.	Mean minimum.	Total.	Departure from normal.	Total snowfall.
	Ins.	*Ins.*	*Ins.*	°	°	°	°	*Ins.*	*Ins.*	*Ins.*		*Ins.*	*Ins.*	*Ins.*	°	°	°	°	*Ins.*	*Ins.*	*Ins.*
St. Johns, N. F	29.76	29.89	—.07	59.2	— 0.6	67.0	51.5	4.34	+0.26		Parry Sound, Ont	29.24	29.97	—.01	66.7	+ 3.2	77.4	55.9	2.39	—0.33	
Sydney, C. B. I	29.89	29.93	—.02	62.2	— 1.1	71.2	53.1	6.30	+2.68		Port Arthur, Ont	29.25	29.96	.00	61.4	+ 1.9	72.0	50.8	1.39	—1.45	
Halifax, N. S	29.85	29.95	—.01	63.6	0.0	72.4	54.9	2.74	—1.61		Winnipeg, Man	29.08	29.89	—.05	65.4	+ 2.0	76.5	54.4	1.41	—1.26	
Grand Manan, N. B	29.89	29.94	—.01	60.4	— 1.1	68.5	52.4	1.86	—1.80		Minnedosa, Man	28.12	29.90	—.04	64.9	+ 5.5	77.1	52.6	1.96	—0.14	
Yarmouth, N. S	29.90	29.97	.00	58.7	— 1.5	66.0	51.4	3.14	—0.87		Qu'Appelle, Assin	27.65	29.86	—.07	64.8	+ 3.3	77.3	52.3	2.24	+0.60	
Charlottetown, P. E. I	29.92	29.96	+.02	64.9	+ 0.6	72.6	57.2	2.26	—1.48		Medicine Hat, Assin	27.61	29.84	—.08	69.6	+ 3.9	84.9	54.3	0.74	—0.93	
Chatham, N. B	29.87	29.89	—.04	63.2	+ 2.0	77.7	52.8	2.41	—1.63		Swift Current, Assin	27.36	29.87	—.06	67.3	+ 3.3	80.9	53.7	0.14	—1.77	
Father Point, Que	29.87	29.89	—.02	56.3	+ 0.7	64.4	48.2	1.42	—1.63		Calgary, Alberta	26.40	29.87	—.04	59.9	+ 0.5	75.9	43.9	0.69	—1.45	
Quebec, Que	29.62	29.94	+.01	63.5	+ 0.4	73.9	53.1	1.35	—2.48		Banff, Alberta	25.40	29.92	+.01	56.8	+ 0.5	71.6	41.9	0.89	—1.64	
Montreal, Que	29.76	29.96	+.01	66.1	— 0.3	73.8	58.4	2.21	—1.36		Edmonton, Alberta	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Rockliffe, Ont	29.36	29.88	—.08	63.0	— 0.2	75.7	50.4	2.02	—0.93		Prince Albert, Sask	28.27	29.80	—.12	62.3	+ 3.4	73.5	51.1	7.49	+5.34	
Ottawa, Ont	29.61	29.93	—.03	66.6	+ 1.8	75.8	57.3	3.10	+0.07		Battleford, Sask	28.17	29.89	—.02	63.8	+ 1.2	76.5	51.0	0.79	—1.57	
Kingston, Ont	29.66	29.97	—.01	64.9	— 2.1	71.9	58.0	5.94	+3.56		Kamloops, B. C	28.67	29.86	—.05	69.2	+ 0.6	82.6	55.7	1.64	+0.55	
Toronto, Ont	29.60	29.96	—.01	67.5	+ 1.5	77.4	57.6	4.22	+1.46		Victoria, B. C	29.95	30.04	+.03	59.4	+ 0.7	65.9	52.9	1.21	+0.61	
White River, Ont	28.64	29.93	—.03	58.0	+ 1.6	71.5	44.6	2.08	—1.22		Barkerville, B. C	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Port Stanley, Ont	29.35	29.98	—.02	68.3	+ 2.4	78.3	58.2	2.26	—0.16		Hamilton, Bermuda	29.97	30.13	+.03	79.6	0.0	85.5	73.6	6.36	+0.28	
Saugeen, Ont	29.29	29.99	.00	65.3	+ 1.5	74.8	55.8	3.29	+1.04												

TABLE VI.—*Heights of rivers referred to zeros of gages, August, 1905.*

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.	Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.						Height.	Date.	Height.	Date.		
Milk River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*	*Monongahela River.*	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Havre, Mont	237	9	3.9	6	2.4	24–31	2.9	1.5	Weston, W. Va	161	18	1.5	26	— 0.5	5,6	—0.2	2.0
Musselshell River.									Fairmont, W. Va	119	25	17.9	13	14.3	5,6,24	15.0	3.6
Musselshell, Mont	87	9	3.0	1	0.0	20–31	0.5	3.0	Greensboro, Pa	81	18	11.7	16	7.2	25	8.2	4.5
Yellowstone River.									Lock No. 4, Pa	40	28	13.0	16	6.3	25	7.5	6.7
Billings, Mont	330	8	2.6	1,2	1.0	30,31	1.6	1.6	*Beaver River.*								
Glendive, Mont	78	17	5.9	2	2.3	29–31	3.5	3.6	Ellwood Junction, Pa	10	14	2.6	16	0.6	14	1.5	2.0
Cheyenne River.									*Muskingum River.*								
Rousseau, S. Dak	7	9	7.0	1	1.3	9	3.4	5.7	Zanesville, Ohio	70	25	14.2	17	7.7	5–11	9.0	6.5
James River.									Beverly, Ohio	20	25	10.7	18	3.9	9–11	5.6	6.8
Lamoure, N. Dak	330	14	— 0.1	30,31	— 0.7	24–26	—0.5	0.6	*Little Kanawha River.*								
Huron, S. Dak	139	9	0.5	2,3	0.1	11–15, 22,24	0.2	0.4	Glenville, W. Va	77	20	3.0	17,26	0.0	9	1.2	3.0
Republican River.									Creston, W. Va	38	20	5.9	20	3.0	5	4.4	2.9
Clay Center, Kans	42	18	13.8	6	7.1	29–31	9.7	6.7	*New River.*								
Smoky Hill River.									Radford, Va	155	14	3.4	11	0.8	1–3	1.8	2.6
Abilene, Kans	45	22	10.5	3	2.0	31	4.9	8.5	Hinton, W. Va	95	14	3.8	13	2.0	4,5,24,31	2.7	1.8
Kansas River.									*Great Kanawha River.*								
Manhattan, Kans	116	18	9.1	19	4.1	30,31	6.7	5.0	Charleston, W. Va	58	30	8.6	13	6.6	27	7.7	2.0
Topeka, Kans	87	21	11.7	20	7.4	31	9.7	4.3	*Scioto River.*								
Missouri River.									Columbus, Ohio	110	17	8.0	15	1.8	1-5,8-11,31	3.2	6.2
Townsend, Mont	2,504	11	3.2	4,5	2.9	15,23–31	3.0	0.3	*Licking River.*								
Fort Benton, Mont	2,285	12	1.1	3,4	0.1	22–31	0.4	1.0	Falmouth, Ky	30	25	4.8	20	1.0	9,10,30,31	2.4	3.8
Wolfpoint, Mont	1,952	17	0.4	3	— 2.1	28–31	—1.3	2.5	*Miami River.*								
Bismarck, N. Dak	1,309	14	4.9	4	1.2	31	2.9	3.7	Dayton, Ohio	77	18	4.0	16	0.5	6,7	1.6	3.5
Pierre, S. Dak	1,114	14	.....	.....	.....	.....	.....	.....	*Kentucky River.*								
Sioux City, Iowa	784	19	10.2	6	6.0	31	8.2	4.2	Jackson, Ky	287	24	8.0	26	5.0	1–24	5.3	3.0
Blair, Nebr	705	15	9.6	7	6.4	31	8.0	3.2	Beattyville, Ky	254	30	1.7	12	0.6	6,7,20–22,31	0.8	1.1
Omaha, Nebr	669	10	7.8	1,7	4.2	31	6.1	3.6	High Bridge, Ky	117	17	11.8	24	9.4	2–9	10.0	2.4
St. Joseph, Mo	481	10	6.1	1	3.2	30,31	4.8	2.9	Frankfort, Ky	65	31	9.0	23	5.9	9,10	6.6	3.1
Kansas City, Mo	388	21	14.2	1,2	8.7	31	11.9	5.5	*Wabash River.*								
Glasgow, Mo	231	18	10.8	3	7.0	31	9.2	3.8	Mount Carmel, Ill	75	15	6.3	17	2.6	6,7	4.4	3.7
Boonville, Mo	199	20	12.6	22	9.1	31	11.1	3.5	*Cumberland River.*								
Hermann, Mo	103	24	16.8	2	10.0	31	13.3	6.8	Burnside, Ky	518	50	5.3	13	0.6	10	2.4	4.7
Minnesota River.									Celina, Tenn	383	45	7.8	14	1.9	7,8	4.0	5.9
Mankato, Minn	127	18	5.2	1	3.2	31	3.9	2.0	Carthage, Tenn	308	40	6.7	12	1.7	9	3.3	5.0
St. Croix River.									Nashville, Tenn	193	40	11.2	13,16	8.0	6	9.2	3.2
Stillwater, Minn	23	11	9.5	22,23	6.8	31	7.7	2.7	Clarksville, Tenn	126	42	10.5	14	4.2	7	7.0	6.3
Chippewa River.									*Powell River.*								
Chippewa Falls, Wis	75	16	3.6	22	1.2	4	2.2	2.4	Tazewell, Tenn	44	20	2.1	26,27	0.4	5–7	1.0	1.7
Red Cedar River.									*Clinch River.*								
Cedar Rapids, Iowa	77	14	3.7	4,6	3.3	22,24	3.5	0.4	Speers Ferry, Va	156	20	0.9	10	— 0.5	4,5	0.3	1.4
Iowa River.									Clinton, Tenn	52	25	7.2	19	3.4	7	5.1	3.8
Iowa City, Iowa	57	.....	0.5	3	— 0.5	14	0.0	1.0	*South Fork Holston River.*								
Des Moines River.									Bluff City, Tenn	35	15	2.6	17	0.8	31	1.5	1.8
Des Moines, Iowa	205	19	4.8	3	3.3	21,22,31	3.8	1.5	*Holston River.*								
Illinois River.									Rogersville, Tenn	103	14	3.8	12,13	2.1	5,22,23,31	2.7	1.7
La Salle, Ill	197	18	12.0	1–3	11.5	11,12	11.8	0.5	*French Broad River.*								
Peoria, Ill	135	14	8.5	1–4	8.0	13	8.3	0.5	Asheville, N. C	144	6	3.9	12	0.0	7,8	1.1	3.9
Red Bank Creek.									Leadvale, Tenn	70	15	5.0	12,13	— 1.6	6,7	0.8	6.6
Brookville, Pa	42	8	0.7	1	0.2	3-15,18-31	0.2	0.5	*Little Tennessee River.*								
Clarion River.									McGhee, Tenn	17	20	6.1	24	2.9	2–7	3.8	3.2
Clarion, Pa	32	10	3.0	17	0.8	11,12	1.7	2.2	*Hiwassee River.*								
Conemaugh River.									Charleston, Tenn	18	22	5.2	24	0.7	5,6	1.9	4.5
Johnstown, Pa	64	7	5.8	16	2.0	9,10	2.9	3.8	*Tennessee River.*								
Kiskiminetas River.									Knoxville, Tenn	635	29	8.0	13	1.6	5–7	3.4	6.4
Saltsburg, Pa	22	6	3.5	16	0.1	14	1.1	3.4	Loudon, Tenn	590	25	6.2	13	1.4	29–31	3.1	4.8
Allegheny River.									Kingston, Tenn	556	25	6.0	13	1.9	6,7	3.4	4.1
Warren, Pa	177	14	2.4	1	0.2	31	0.9	2.2	Chattanooga, Tenn	452	33	8.9	15	2.8	8	5.3	6.1
Franklin, Pa	114	15	3.9	13	0.5	31	1.9	3.4	Bridgeport, Ala	402	24	7.0	16	1.3	9	3.5	5.7
Parker, Pa	73	20	4.3	1	1.3	31	2.1	3.0	Guntersville, Ala	349	31	10.8	16,17	3.1	8–10	6.2	7.7
Freeport, Pa	29	20	9.6	1	2.8	10	4.6	6.8	Florence, Ala	255	16	6.1	17	1.4	9–11	3.1	4.7
Springdale, Pa	17	27	12.9	1	7.4	10	8.7	5.5	Riverton, Ala	225	26	9.5	17,18	3.1	9,10	5.6	6.4
Cheat River.									Johnsonville, Tenn	95	21	8.4	19	2.5	12	4.8	5.9
Rowlesburg, W. Va	36	14	3.5	17	1.6	31	2.3	1.9	*Ohio River.*								
Youghiogheny River.									Pittsburg, Pa	966	22	8.0	1	3.2	4,20	5.8	4.8
Confluence, Pa	59	10	4.0	16	0.6	10	1.6	3.4	Davis Island Dam, Pa	960	25	9.5	1	3.9	11	5.4	5.6
West Newton, Pa	15	23	7.7	16	0.8	11	2.0	6.9	Beaver Dam, Pa	925	27	13.4	1	4.9	8	7.2	8.5

TABLE VI.—*Heights of rivers referred to zeros of gages*—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Ohio River—Cont'd.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Wheeling, W. Va	875	36	13.4	1	4.5	9	6.9	8.9
Parkersburg, W. Va	785	36	12.4	18	5.4	1, 12	7.8	7.0
Point Pleasant, W. Va	703	39	13.0	19	4.9	8	7.2	8.1
Huntington, W. Va	660	50	16.1	19, 20	8.3	2	10.9	7.8
Catlettsburg, Ky	651	50	16.5	20	6.9	1, 2	9.9	9.6
Portsmouth, Ohio	612	50	17.3	21	7.5	1	11.0	9.8
Maysville, Ky	539	50	17.1	21	7.4	2	10.7	9.7
Cincinnati, Ohio	499	50	19.0	22	9.2	3	12.9	9.8
Madison, Ind	413	46	16.5	23	7.6	4	11.4	8.9
Louisville, Ky	367	28	8.1	23	3.8	5	5.5	4.3
Evansville, Ind	184	35	15.1	26	6.6	7	10.0	8.5
Mount Vernon, Ind	148	35	14.3	26	6.1	8	9.4	8.2
Paducah, Ky	47	40	12.7	27, 28	7.7	9–11	10.1	5.0
Cairo, Ill	1	45	24.2	3, 4	18.7	18	21.3	5.5
St. Francis River.								
Marked Tree, Ark	104	17	10.8	25, 26	8.9	1	10.0	1.9
Neosho River.								
Neosho Rapids, Kans	326	22	3.3	1	— 0.3	30	0.5	3.6
Iola, Kans	262	10	2.1	19	— 0.2	27–31	0.5	2.3
Oswego, Kans	184	20	18.8	21	0.3	30, 31	2.6	18.5
Fort Gibson, Ind. T	3	22	23.5	21	11.0	31	14.2	12.5
Canadian River.								
Calvin, Ind. T	99	10	5.2	17	2.1	31	3.0	3.1
Black River.								
Blackrock, Ark	67	12	18.0	2	5.4	31	10.9	12.6
White River.								
Calicorock, Ark	272	15	30.0	1	2.4	31	6.7	27.6
Batesville, Ark	217	18	27.5	2	4.6	31	9.0	22.9
Newport, Ark	185	26	27.5	3	6.0	31	15.0	21.5
Clarendon, Ark	75	30	27.0	16	22.2	2, 3	24.6	4.8
Arkansas River.								
Pueblo, Colo	1,334	10						
Wichita, Kans	832	10	3.0	8	0.5	29–31	1.6	2.5
Tulsa, Ind. T	551	16	5.8	18	3.0	31	4.2	2.8
Webbers Falls, Ind. T	465	23	16.2	22	5.4	31	7.8	10.8
Fort Smith, Ark	403	22	15.6	22	6.0	31	9.0	9.6
Dardanelle, Ark	256	21	14.9	23	5.6	31	8.7	9.3
Little Rock, Ark	176	23	15.1	25	7.4	11, 12, 16	9.7	7.7
Greenwood, Miss	175	38	6.4	3	3.0	7	4.8	3.4
Yazoo City, Miss	80	25	5.0	2	2.7	11	3.5	2.3
Yazoo River.								
Little River.								
Whitecliffs, Ark	33	20	14.5	1	1.5	31	4.7	13.0
Ouachita River.								
Camden, Ark	304	39	19.5	4	5.2	31	9.7	14.3
Monroe, La	122	40	38.8	1	23.2	31	32.4	15.6
Red River.								
Arthur City, Tex	688	27	13.7	1	6.7	31	8.8	7.0
Fulton, Ark	515	28	25.0	1	9.6	31	13.6	15.4
Springbank, Ark	441	29	30.1	2, 3	12.1	31	20.6	18.0
Shreveport, La	327	29	22.6	1–4	6.8	31	14.4	15.8
Alexandria, La	118	33	31.8	1	14.2	28	23.4	17.6
Mississippi River.								
St. Cloud, Minn	2,034	4	3.0	17, 20	1.7	31	2.2	1.3
St. Paul, Minn	1,954	14	8.2	21	6.4	31	7.3	1.8
Red Wing, Minn	1,914	14	6.7	24	4.8	9–13, 16	5.5	1.9
Reeds Landing, Minn	1,884	12	6.1	24	4.3	16	5.0	1.8
La Crosse, Wis	1,819	12	7.5	1, 28	5.5	17–19	6.4	2.0
Prairie du Chien, Wis	1,759	18	8.8	1	5.8	21	6.9	3.0
Dubuque, Iowa	1,699	18	9.9	1	6.3	22–24	7.9	3.6
Clinton, Iowa	1,629	16	9.7	1	5.8	23–25	7.1	3.9
Leclaire, Iowa	1,609	10	6.5	1	4.0	22–24	4.9	2.5
Davenport, Iowa	1,593	15	8.6	1	5.0	24	6.3	3.6
Muscatine, Iowa	1,562	16	10.1	1	6.1	25	7.4	4.0
Galland, Iowa	1,472	8	5.1	1	3.0	21	3.7	2.1
Keokuk, Iowa	1,463	15	9.0	1	5.3	21	6.5	3.7
Warsaw, Ill	1,458	18	11.5	1	8.4	21, 22	9.4	3.4
Hannibal, Mo	1,402	13	10.2	1	6.0	21, 22	7.7	4.2
Grafton, Ill	1,306	23	12.4	1, 4	8.3	31	9.4	4.1
St. Louis, Mo	1,264	30	21.5	3	12.4	31	16.4	9.1
Chester, Ill	1,189	30	18.6	4	11.2	19	14.5	7.4
New Madrid, Mo	1,003	34	19.8	4, 5	15.1	18, 19	17.3	4.7
Luxora, Ark	905	33	14.1	1	9.0	18	11.6	5.1
Memphis, Tenn	843	33	17.2	1	11.7	20, 21	14.0	5.5
Helena, Ark	767	42	25.1	1	17.0	22	20.5	8.1
Arkansas City, Ark	635	42	31.3	1	23.4	18, 22	26.4	7.9
Greenville, Miss	595	42	26.0	1	18.8	22, 23	21.4	7.2
Vicksburg, Miss	474	45	29.9	1	20.6	25	24.1	9.3
Natchez, Miss	373	46	33.1	1	23.9	25–27	27.6	9.2
Baton Rouge, La	240	35	25.5	1, 2	17.8	28	21.5	7.7
Donaldsonville, La	188	28	19.7	1	13.1	27	16.4	6.6
New Orleans, La	108	16	12.8	1	9.2	27	11.0	3.6
Atchafalaya River.								
Simmesport, La	127	33	31.5	1	23.4	28–30	26.5	8.1
Melville, La	103	31	31.5	1	25.9	28–31	28.7	5.4
Morgan City, La	19	8	5.2	30	3.4	21	4.3	1.8
Grand River.								
Grand Rapids	38	11	3.1	20, 21	1.6	13, 14, 21	2.1	1.5
Connecticut River.								
Hartford, Conn	50	13	7.1	2	2.5	12	3.7	4.6
Mohawk River.								
Tribeshill, N. Y	42	12	3.0	17	0.0	25–30	0.8	3.0
Schenectady, N. Y	19	15	4.6	16, 17	1.0	11, 22, 30	1.6	3.6
Hudson River.								
Troy, N. Y	154	14	4.5	18	2.4	24, 27	3.4	2.1
Albany, N. Y	147	12	5.9	17	1.3	25	3.5	4.6
Rampo River.								
Mahwah, N. J	14	6	3.4	16	2.6	25	2.8	0.8
Pompton River.								
Pompton Plains, N. J	6	8	4.0	16–18	3.4	1–15	3.6	0.6
Passaic River.								
Chatham, N. J	69	7	4.3	16	2.0	5–9, 12–14	2.6	2.3
Lehigh River.								
Mauchchunk, Pa	45	15	5.6	16	4.1	4, 10	4.4	1.5
Schuylkill River.								
Reading, Pa	66	12	2.2	16, 26	0.1	3–6	0.8	2.1
Delaware River.								
Hancock (E. Branch), N. Y	269	12	4.5	31	2.8	28–30	3.1	1.7
Hancock (W. Branch), N. Y	269	10	4.4	31	3.0	28	3.4	1.4
Port Jervis, N. Y	204	14	1.2	18	— 0.3	13	0.2	1.5
Phillipsburg, N. J	142	26	2.4	17	0.5	9, 11, 12	1.2	1.9
Trenton, N. J	92	18	4.5	16	0.6	1	1.3	3.9
North Branch Susquehanna.								
Binghamton, N. Y	183	16	4.3	18	2.2	30	2.7	2.1
Towanda, Pa	139	16	2.9	18	1.0	30, 31	1.8	1.9
Wilkes-Barre, Pa	80	17	5.8	19	3.3	30, 31	4.4	2.5
West Branch Susquehanna.								
Lockhaven, Pa	65	12						
Williamsport, Pa	39	20	5.9	16	1.3	5, 11	2.6	4.6
Juniata River.								
Huntingdon, Pa	90	24	6.0	15, 25	3.1	9–11	3.8	2.9
Susquehanna River.								
Harrisburg, Pa	69	17	6.2	17	1.8	31	2.9	4.4
Shenandoah River.								
Riverton, Va	58	22	0.5	1–31	0.5	1–31	0.5	0.0
Potomac River.								
Cumberland, Md	290	8	4.5	26	2.3	22–24	2.8	2.2
Harpers Ferry, W. Va	172	18	6.0	27	0.0	14	1.6	6.0
James River.								
Buchanan, Va	305	12	2.1	16	2.2	30, 31	2.6	0.9
Lynchburg, Va	260	18	3.5	15	0.5	25, 30, 31	1.3	3.0
Columbia, Va	167	18	9.9	16	3.5	31	5.0	6.4
Richmond, Va	111	12	4.4	16	— 0.1	13	0.7	4.5
Dan River.								
Danville, Va	55	8	2.7	11	0.0	22, 23	0.7	2.7
Roanoke River.								
Clarksville, Va	196	12	4.3	12	0.0	31	1.4	4.3
Weldon, N. C	129	30	19.8	13	9.2	31	12.4	10.6
Tar River.								
Tarboro, N. C	46	25	11.9	13	1.6	7	5.7	10.3
Greenville, N. C	21	22	11.3	14	3.5	7, 8	6.8	7.8
Haw River.								
Moncure, N. C	171	25	18.1	11	0.9	4	4.9	17.2
Cape Fear River.								
Fayetteville, N. C	112	38	41.4	12	3.2	7, 8	14.1	38.2
Waccamaw River.								
Conway, S. C	40	7	4.4	1	2.4	9	3.2	2.0
Pedee River.								
Cheraw, S. C	149	27	30.7	11	1.9	5	10.3	28.8
Smiths Mills, S. C	51	16	16.3	20, 21	3.6	8	10.4	12.7
Lynch Creek.								
Effingham, S. C	35	12	11.0	19	3.0	7–10	5.4	8.0
Black River.								
Kingstree, S. C	45	12	3.8	24, 30	1.8	14	2.9	2.0
Catawba River.								
Mount Holly, N. C	28	15	7.8	12	1.8	19, 27–31	2.6	6.0
Wateree River.								
Camden, S. C	37	24	28.5	12	5.0	5	13.1	23.5
Broad River.								
Blairs, S. C	36	14	10.1	12	0.7	4, 5	3.0	9.4
Saluda River.								
Chappels, S. C	56	14	12.0	13	1.4	6	4.7	10.6
Congaree River.								
Columbia, S. C	52	15	13.1	13	0.8	5	3.5	12.3
Santee River.								
St. Stephens, S. C	50	12	11.0	20, 21	3.6	8	7.9	7.4
Edisto River.								
Edisto, S. C	75	6	2.8	20	0.0	4–10	1.5	2.8
Broad River.								
Carlton, Ga	30	11	4.0	13	1.6	2–8	2.2	2.4
Savannah River.								
Calhoun Falls, S. C	347	15	6.9	11	1.5	7	3.7	5.4
Augusta, Ga	268	32	13.8	14	6.4	7	9.0	7.4
Oconee River.								
Milledgeville, Ga	147	25	13.0	18	0.7	7	3.1	12.3
Dublin, Ga	79	30	5.8	20	— 1.1	7	1.2	6.9
Ocmulgee River.								
Macon, Ga	203	18	10.6	13	— 0.1	7, 8	2.5	10.7
Abbeville, Ga	96	11	6.9	19	0.4	9, 10	2.7	6.5
Flint River.								
Woodbury, Ga	227	10	3.9	17	— 0.3	7	1.0	4.2
Montezuma, Ga	152	20	8.2	15	1.3	9	4.1	6.9
Albany, Ga	90	20	5.9	14	0.1	8	2.3	5.8
Bainbridge, Ga	29	22	7.1	18	2.6	10	4.4	4.5
Chattahoochee River.								
Oakdale, Ga	305	18	7.0	13	2.0	6, 7	3.4	5.0
West Point, Ga	239	20	6.2	16	1.3	3	3.0	4.9
Eufaula, Ala	90	40	9.0	15	1.0	9	4.1	8.0
Alaga, Ala	30	25	10.6	18	1.8	9	4.6	8.8
Oostanaula River.								
Resaca, Ga	38	25	8.8	17	1.6	5	3.8	7.2
Etowah, River.								
Canton, Ga	65	20	2.5	12	0.2	4–7, 28–31	0.6	2.3
Coosa River.								
Rome, Ga	271	30	6.0	16	0.5	6–8	2.2	5.5
Gadsden, Ala	144	22	6.8	17	— 0.1	9	2.3	6.9
Lock No. 4, Ala	116	17	5.5	17	0.3	8, 9	2.3	5.2
Wetumpka, Ala	6	45	11.1	19	1.6	8	5.6	9.5
Tallapoosa River.								
Milstead, Ala	38	35	7.3	14	0.8	9, 10	2.8	6.5
Alabama River.								
Montgomery, Ala	265	35	8.8	19	— 0.1	9	3.2	8.9
Selma, Ala	212	35	10.0	20	1.6	6–10	4.5	8.4
Black Warrior River.								
Tuscaloosa, Ala	90	43	23.0	27	5.2	9, 10	9.4	17.8
Tombigbee River.								
Columbus, Miss	303	33	6.0	12	— 2.2	9	1.0	8.2
Vienna, Ala	233	42	7.5	14	1.5	2	5.1	6.0
Demopolis, Ala	155	35	15.8	15	1.1	11	8.1	14.7

TABLE VI.—*Heights of rivers referred to zeros of gages.*—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Leaf River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Hattiesburg, Miss	60	20	7.5	20	2.9	1	4.6	4.6
Chickasawhay River.								
Enterprise, Miss	144	18	9.6	20, 21	1.9	7	4.4	7.7
Shubuta, Miss	106	25	13.8	20	3.0	2, 3	7.3	10.8
Pascagoula River.								
Merrill, Miss	78	20	11.3	23	1.9	2	6.6	9.4
Pearl River.								
Jackson, Miss	242	20	5.8	31	1.8	1	3.6	4.0
Columbia, Miss	110	14	8.0	15	4.9	1, 2	6.2	3.1
Sabine River.								
Logansport, La	315	25	26.6	1	3.0	30	12.2	23.6
Neches River.								
Rockland, Tex	105	20	11.8	10	1.0	30, 31	5.7	10.8
Beaumont, Tex	18	10	2.7	1	1.2	23, 27	1.9	1.5
Trinity River.								
Dallas, Tex	320	25	10.2	23	3.2	31	5.3	7.0
Long Lake, Tex	211	35	37.6	1	3.7	31	14.6	33.9
Riverside, Tex	112	40	26.7	1, 2	1.6	29, 30	11.4	25.1
Liberty, Tex	20	25	23.7	31	6.2	12	15.4	17.5
Brazos River.								
Kopperl, Tex	345	21	8.0	1, 2	0.4	31	4.6	7.6
Waco, Tex	285	24	7.2	9	3.2	31	5.0	4.0
Valley Junction, Tex	215	40	9.8	1	2.0	30, 31	5.2	7.8
Hempstead, Tex	140	40	13.0	1	2.3	31	5.8	10.7
Booth, Tex	61	39	11.7	1	3.5	25-31	5.7	8.2
Colorado River.								
Ballinger, Tex	489	21	2.7	1-3	1.8	8-31	1.9	0.9
Austin, Tex	214	18	4.4	1	0.8	31	1.6	3.6
Colorado River—Cont'd.								
Columbus, Tex	98	24	14.2	3	6.8	29-31	8.3	7.4
Guadalupe River.								
Gonzales, Tex	112	22	1.1	8	0.7	27	0.9	0.4
Victoria, Tex	35	16	2.2	1, 10	1.6	29-31	1.9	0.6
Rio Grande River.								
San Marcial, N. Mex	1,233	11	7.5	9	5.1	28-31	6.3	2.4
El Paso, Tex	1,030	14	7.6	12	5.5	31	.....	2.1
Red River of the North.								
Moorhead, Minn	284	26	11.5	18	9.7	11	10.4	1.8
Kootenai River.								
Bonners Ferry, Idaho	123	24	8.5	1	3.1	31	5.9	5.4
Pend d'Oreille River.								
Newport, Wash	86	14	2.4	1	— 0.5	31	0.7	2.9
Snake River.								
Lewiston, Idaho	144	24	1.1	1	— 0.2	27-31	0.2	1.3
Riparia, Wash	67	30	1.5	1	0.4	26-31	0.7	1.1
Columbia River.								
Wenatchee, Wash	473	40	19.8	1, 2	11.6	31	16.8	8.2
Umatilla, Oreg	270	25	8.8	1, 2	4.9	31	7.4	3.9
The Dalles, Oreg	166	40	12.7	1	6.5	31	10.5	6.2
Willamette River.								
Albany, Oreg	118	20	0.8	1-6	0.5	26-31	0.7	0.3
Salem, Oreg	84	20	0.6	10, 11	— 0.1	26-31	0.1	0.7
Portland, Oreg	12	15	7.1	2	3.7	25, 26	5.3	3.4
Sacramento River.								
Red Bluff, Cal	201	23	0.4	1-5	0.1	30, 31	0.3	0.3
Sacramento, Cal	64	25	8.1	1-3	6.9	31	7.4	1.2

(1) one day missing. (2) 22 days only. (3) 15 days only.

Honolulu, T. H., latitude, 21° 19′ north, longitude 157° 52′ west; barometer above sea, 38 feet; gravity correction, —.057 applied. August, 1905.

Day.	Pressure.*		Air temperature.				Moisture.				Wind.				Precipitation.		Clouds.					
							8 a. m.		8 p. m.		8 a. m.		8 p. m.				8 a. m.			8 p. m.		
	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Maximum.	Minimum.	Wet.	Relative humidity.	Wet.	Relative humidity.	Direction.	Velocity.	Direction.	Velocity.	8 a. m.	8 p. m.	Amount.	Kind.	Direction.	Amount.	Kind.	Direction.
1	30.08	30.09	76.0	75.9	82	73	71.0	78	69.0	70	ne.	11	ne.	7	0.03	T.	8	N.	ne.	1 5	Ci.-cu. S.-cu.	w. e.
2	30.11	30.07	76.5	77.2	83	73	71.2	77	69.7	69	ne.	4	e.	5	T.	T.	1 8	Ci.-cu. S.-cu.	nw. e.	7	S.-cu.	e.
3	30.09	30.07	79.4	76.5	83	74	70.7	65	69.6	71	ne.	9	ne.	4	0.00	0.00	2	Cu.	se.	1	Cu.	e.
4	30.07	30.04	77.9	76.8	83	74	71.1	72	68.3	65	nw.	4	ne.	8	0.00	0.00	6 1	Cu. S.-cu.	e. e.	4	Cu.	e.
5	30.05	30.04	79.2	75.7	83	73	68.9	59	68.1	68	e.	3	ne.	9	0.00	0.00	1	Cu.	e.	1	Cu.	e.
6	30.04	30.06	77.3	76.2	82	72	68.0	62	68.7	68	ne.	2	ne.	9	0.00	0.00	4	Cu.	e.	2	Cu.	e.
7	30.07	30.06	75.4	77.0	82	71	72.1	85	69.2	68	ne.	5	ne.	8	0.06	0.04	3 6	Cu. N.	ne. ne.	1 6	Cu. S.-cu.	e. e.
8	30.05	30.04	77.0	75.0	81	73	68.0	63	70.0	78	ne.	11	ne.	8	0.06	0.01	4	Cu.	e.	9	N.	e.
9	29.95	29.98	79.0	78.4	82	72	73.2	76	70.3	67	ne.	20	e.	14	1.02	0.01	4 6	S.-cu. N.	e. e.	5	Cu.	e.
10	30.02	30.00	78.4	76.6	82	74	70.0	66	68.0	64	e.	15	e.	4	0.00	T.	3	Cu.	e.	6	Cu.	e.
11	30.02	30.00	77.2	76.8	82	74	69.0	66	68.1	64	ne.	7	ne.	10	0.01	T.	6	Cu.	e.	5	Cu.	e.
12	30.00	30.01	76.3	76.5	82	71	71.2	78	70.5	74	e.	2	e.	4	0.23	T.	8	Cu.	e.	6	Cu.	e.
13	30.05	30.06	80.0	78.5	84	74	72.4	70	71.3	70	e.	2	ne.	9	0.00	T.	5 1	Cu. S.-cu.	e. e.	1 3	A.-s. Cu.	e. e.
14	30.08	30.05	76.4	77.2	81	72	72.2	82	70.0	70	ne.	4	ne.	4	0.04	0.03	2 4	Cu. N.	e. e.	6	Cu.	ne.
15	30.03	30.00	80.1	77.2	84	73	72.1	68	71.9	78	ne.	8	ne.	8	0.02	0.01	2	Cu.	e.	2	Cu.	e.
16	30.03	30.02	79.0	78.4	84	73	71.2	68	71.4	71	ne.	5	e.	7	T.	0.00	8	Cu.	e.	5	Cu.	e.
17	30.02	30.02	79.5	77.3	82	73	71.0	66	70.3	71	se.	7	ne.	8	0.04	T.	4	Cu.	e.	2 4	Cu. N.	e. e.?
18	30.03	29.99	77.6	76.8	82	73	70.0	69	70.0	71	e.	8	ne.	7	0.06	0.01	2 4	Cu. N.	e. e.	1 5	S.-cu. N.	e. e.
19	30.02	29.99	78.9	76.5	82	74	69.9	64	68.7	67	e.	6	ne.	4	T.	0.00	1	Cu.	e.	2	S.-cu.	e.
20	29.99	29.97	77.1	76.5	82	73	69.0	67	68.7	67	ne.	6	ne.	10	0.00	0.00	6 2	Ci.-s. Cu.	w. e.	2	S.-cu.	e.
21	29.98	29.96	79.0	76.8	83	72	69.8	63	68.8	67	ne.	10	ne.	3	T.	0.00	1 3	Ci.-s. S.-cu.	w. 0	2 3	Ci.-s. S.-cu.	w. e.
22	29.98	29.94	78.2	75.7	83	70	69.2	63	68.5	69	e.	12	e.	10	0.02	0.02	2 1	Ci.-s. Cu.	w. e.	6	N.	e.
23	29.99	29.97	77.0	77.5	84	72	69.3	68	70.0	69	e.	12	ne.	8	0.14	T.	9	S.-cu.	e.	2	S.-cu.	e.
24	29.98	29.98	79.8	78.0	84	75	70.0	61	70.5	69	ne.	9	e.	14	0.00	T.	few.	Ci.-s.	0	9	S.-cu.	e.
25	29.98	30.00	79.0	76.6	83	72	71.4	69	68.0	64	e.	12	ne.	5	0.04	T.	4	Cu.	e.	6 1	Cu. S.-Cu.	e. e.
26	30.00	30.00	75.0	76.0	79	71	71.3	83	68.5	68	ne.	7	ne.	12	0.06	0.08	9	N.	e.	9	N.	e.
27	30.01	30.02	77.3	75.5	84	74	71.0	73	70.5	78	e.	14	ne.	15	T.	0.01	1	Cu.	e.	8	N.	e.
28	30.04	29.99	76.3	76.2	81	71	68.0	65	67.3	63	e.	11	ne.	14	0.03	T.	5 3	Ci.-s. S.-cu.	w. e.	4	S.-cu.	e.
29	29.98	29.99	74.5	76.0	81	70	69.8	79	67.5	64	ne.	13	e.	8	0.08	T.	3 4	S.-cu. N.	e. e.	2	Cu.	e.
30	29.98	29.99	78.0	75.7	81	72	68.4	62	68.1	68	e.	6	ne.	6	0.00	T.	6 2	Ci.-cu. S.-cu.	w. e.	5	Cu.	e.
31	29.99	30.00	76.3	76.0	81	72	70.5	75	67.5	64	ne.	5	ne.	4	0.03	0.01	4 5	S.-cu. N.	e. e.	8	S.-cu.	e.
Mean	30.023	30.013	77.7	76.7	82.3	72.6	70.4	69.7	69.3	68.8	ne.	8.1	ne.	7.9	0.00	1.97	5.6	Cu.	e.	5.1	Cu.	e.

Observations are made at 8 a. m. and 8 p. m., local standard time, which is that of 157° 30′ west, and is 5h and 30m slower than 75th meridian time. *Pressure values are reduced to sea level and standard gravity.

MEXICAN CLIMATOLOGICAL DATA.

By Señor MANUEL E. PASTRANA, Director of the Central Meteorologic-Magnetic Observatory.

August, 1905.

Stations.	Altitude.	Mean barometer.*	Temperature.			Relative humidity.	Precipitation.	Prevailing direction.	
			Max.	Min.	Mean.			Wind.	Cloud.
	Feet.	*Inches.*	° *F.*	° *F.*	° *F.*	%	*Ins.*		
Aguascalientes (Seminario.)	6,330	.....	.....	.....	.....	.....	.....	.....	.....
C. Juarez	3,805	26.13	96.0	67.0	80.8	69	0.40	e.	.....
Colima Seminario	1,663	.....	.....	.....	.....	.....	.....	.....	.....
Chihuahua	4,684	.....	.....	.....	.....	.....	.....	.....	.....
Guadalajara (Seminario.)	5,186	.....	.....	.....	.....	.....	.....	.....	.....
Guanajuato	6,720	.....	.....	.....	.....	.....	.....	.....	.....
Hugotitan Hda (Jalasco.)	5,228	.....	.....	.....	.....	.....	.....	.....	.....
Jalapa	4,681	25.53	80.0	58.0	67.5	82	6.13	n.	.....
Leon	5,906	24.31	85.0	54.0	70.9	66	3.96	sw.	.....
Mexico (Obs. Cent.)	7,472	23.00	80.0	51.0	62.8	66	2.20	ne.	e.
Morelia (Seminario)	6,401	23.92	79.0	53.0	63.9	70	3.48	.....	.....
Oaxaca	5,063	24.98	94.0	52.0	71.8	63	3.78	s.	.....
Panal	5,674	24.57	84.0	54.0	69.4	.....	3.22	e.	.....
Puebla (Col. d Est.)	7,118	23.34	78.0	39.0	64.0	74	6.74	ene.	.....
San Juan de Ulnor	39	.....	.....	.....	.....	.....	.....	.....	.....
San Luis Potosi	6,202	.....	.....	.....	.....	.....	.....	.....	.....
Valladolid (Yucatan)	82	.....	.....	.....	.....	.....	.....	.....	.....
Zacatecas	8,015	22.56	80.0	48.0	62.8	60	4.43	e.	.....
Zacuallipam	.....	.....	81.0	43.0	63.1	88	4.84	n.	.....

*The monthly barometric means are reduced to the international standard of gravity.

RAINFALL IN JAMAICA.

Through the kindness of Mr. H. H. Cousins, chemist to the government of Jamaica and now in charge of the meteorological service of that island, we have received the following tables:

Comparative tables of rainfall.

[Based upon the average stations only.]

AUGUST, 1905.

Divisions.	Relative area.	Number of stations.	Rainfall.	
			1905.	Average.
	Per cent.		*Inches.*	*Inches.*
Northeastern division	25	24	7.74	7.52
Northern division	22	50	3.51	4.38
West-central division	26	24	7.59	9.25
Southern division	27	53	5.84	5.29
Means	100		6.17	6.61

The rainfall for August was, therefore, below the average for the whole island. The greatest fall, 33.93 inches, occurred at Point Hill in the central subdivision, while 0.50 inch was recorded at Rose Hall in the northern division.

• Barkerville

Chart I. Tracks of Centers of High Areas, August, 1905.

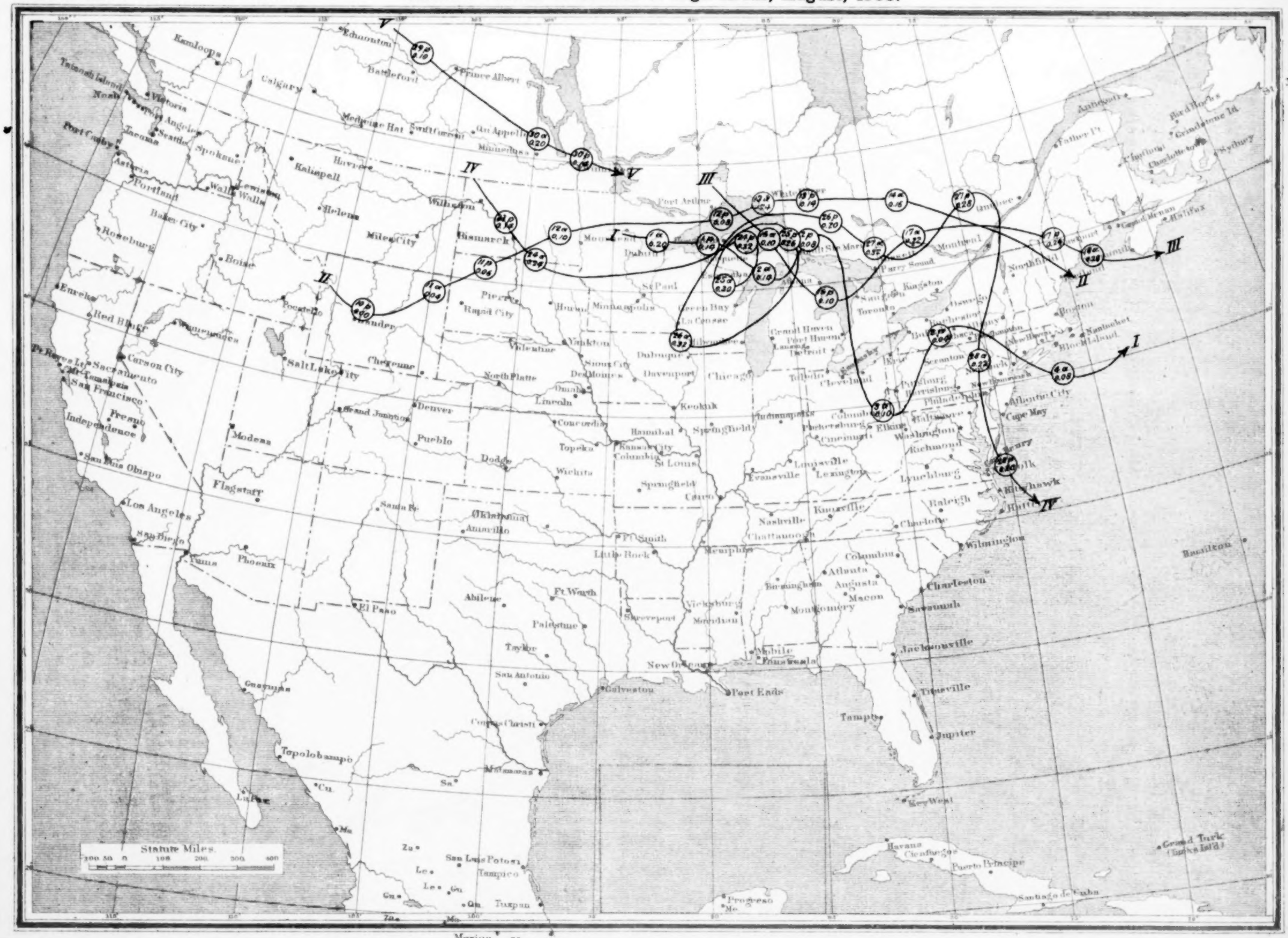

Chart II. Tracks of Centers of Low Areas, August, 1905.

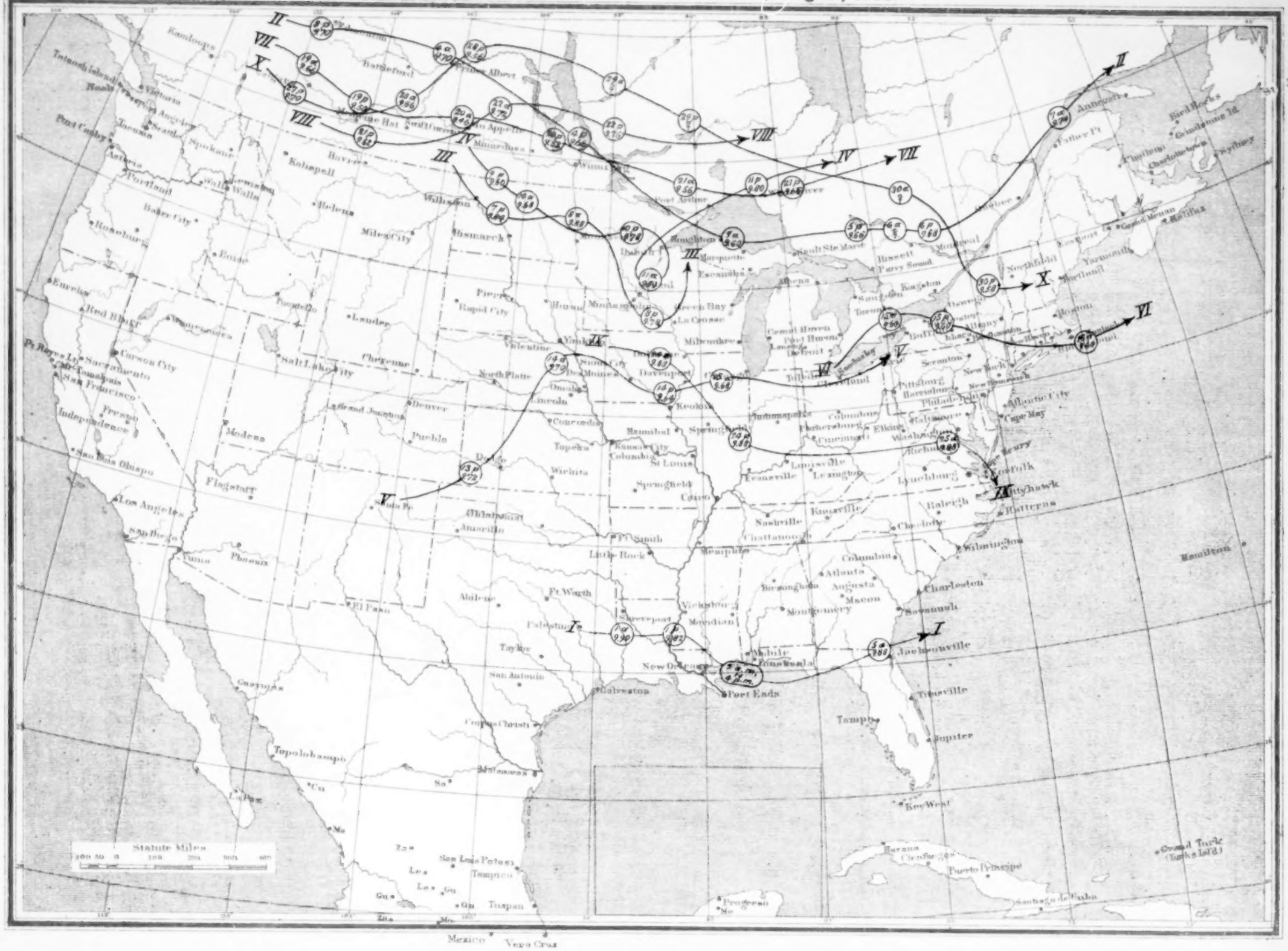
II
VII
X
VIII
III
IV
VI
V
I
Statute Miles
Kamloops
Victoria
Seattle
Spokane
Portland
Walla Walla
Helena
Miles City
Bismarck
Duluth
Marquette
Escanaba
Green Bay
La Crosse
Rapid City
Huron
Valentine
North Platte
Omaha
Lincoln
Denver
Grand Junction
Pueblo
Salt Lake City
Chugwater
Carson City
Sacramento
San Francisco
Fresno
Independence
Modena
Flagstaff
Los Angeles
San Diego
Yuma
Phoenix
El Paso
Abilene
Ft Worth
Palestine
Taylor
San Antonio
Galveston
Port Eads
Corpus Christi
Brownsville
Tampico
Progreso
Havana
Key West
Tampa
Jacksonville
Savannah
Charleston
Wilmington
Hatteras
Norfolk
Cape May
Atlantic City
Philadelphia
Baltimore
Washington
Richmond
Lynchburg
Roanoke
Knoxville
Nashville
Chattanooga
Memphis
Little Rock
Ft Smith
Oklahoma
Amarillo
Wichita
Topeka
Kansas City
St Louis
Springfield
Cairo
Louisville
Cincinnati
Indianapolis
Columbus
Pittsburg
Buffalo
Scranton
New York
Albany
Boston
Portland
Detroit
Chicago
Milwaukee
Davenport
Keokuk
Omaha
Grand Haven
Port Huron
Toronto
Kingston
Ottawa
Montreal
Quebec
Sault Ste Marie
Parry Sound
Athens
Minneapolis
Winnipeg
Prince Albert
Battleford
Medicine Hat
Calgary
Minnedosa
Swift Current
Moose Jaw
Qu'Appelle
Regina
Qu'Appelle
Prince Rupert
Tatoosh Island
Nootka
Tacoma
Astoria
Port Crescent
Kalispell
Roseburg
Baker City
Boise
Winnemucca
Reno
Eureka
Red Bluff
Independence
Fresno

Chart III. Total Precipitation, August, 1905.

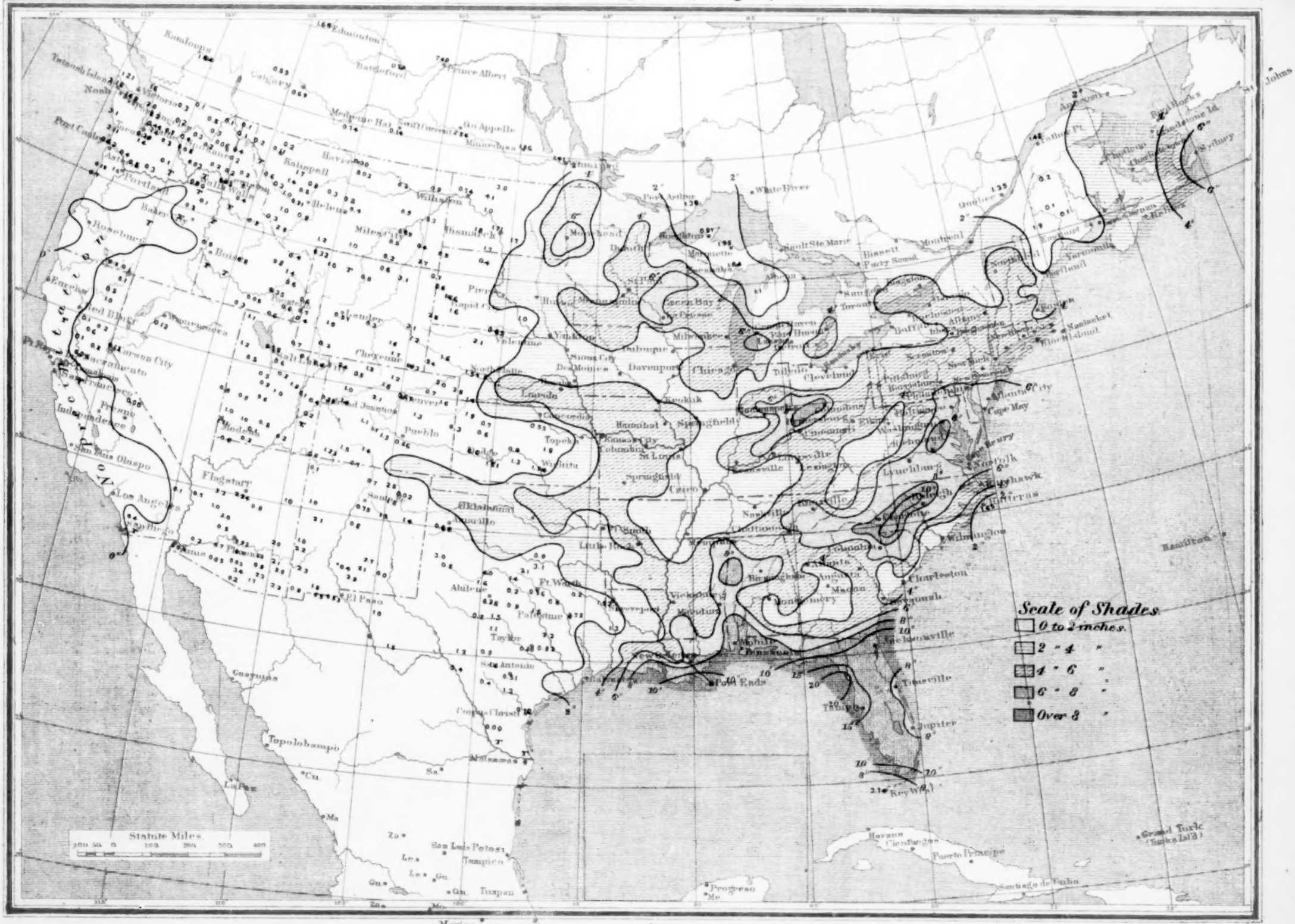

Chart IV. Percentage of Clear Sky, August, 1905.

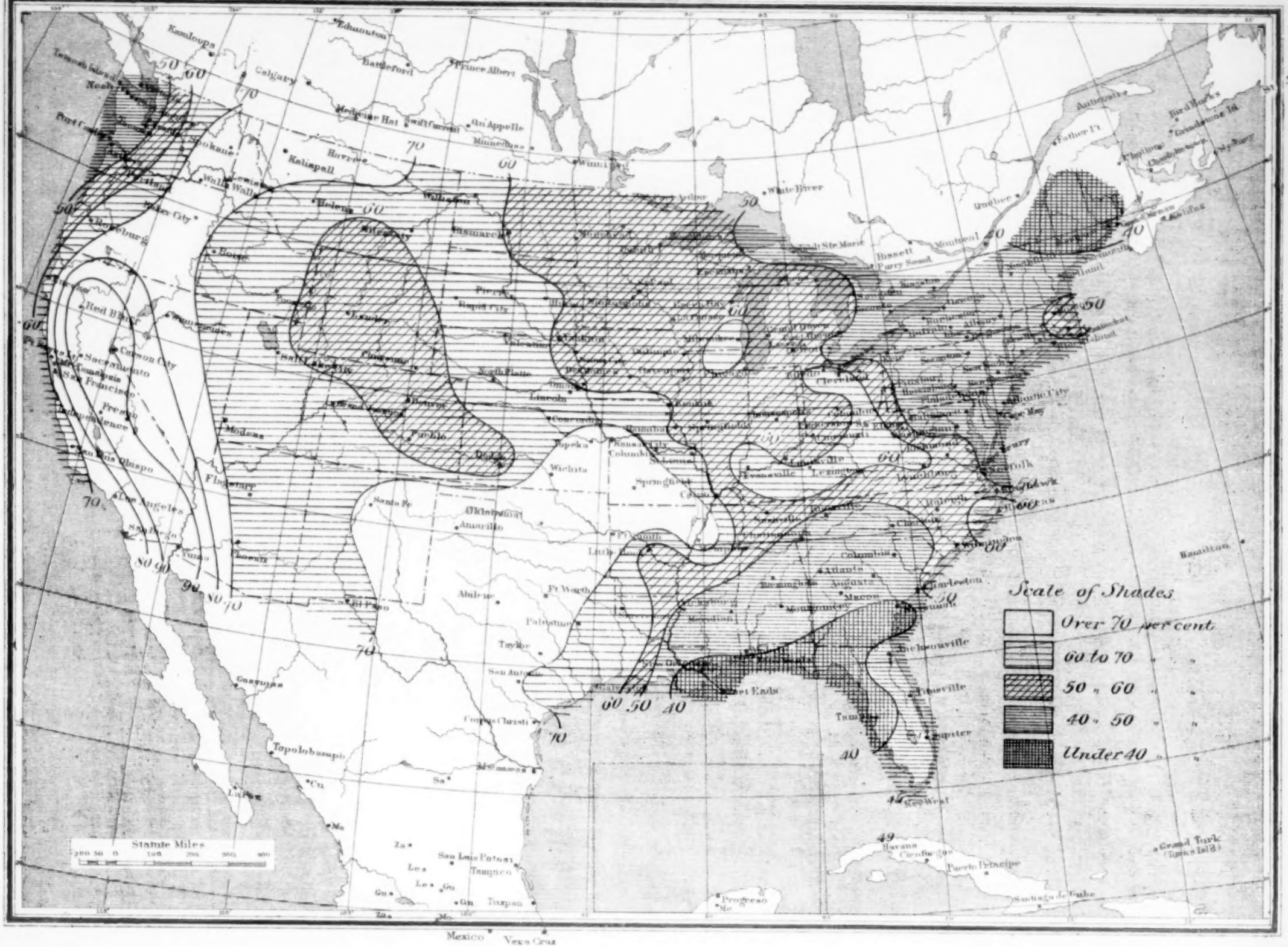

Chart V. Hydrographs for Seven Principal Rivers of the United States, August, 1905.

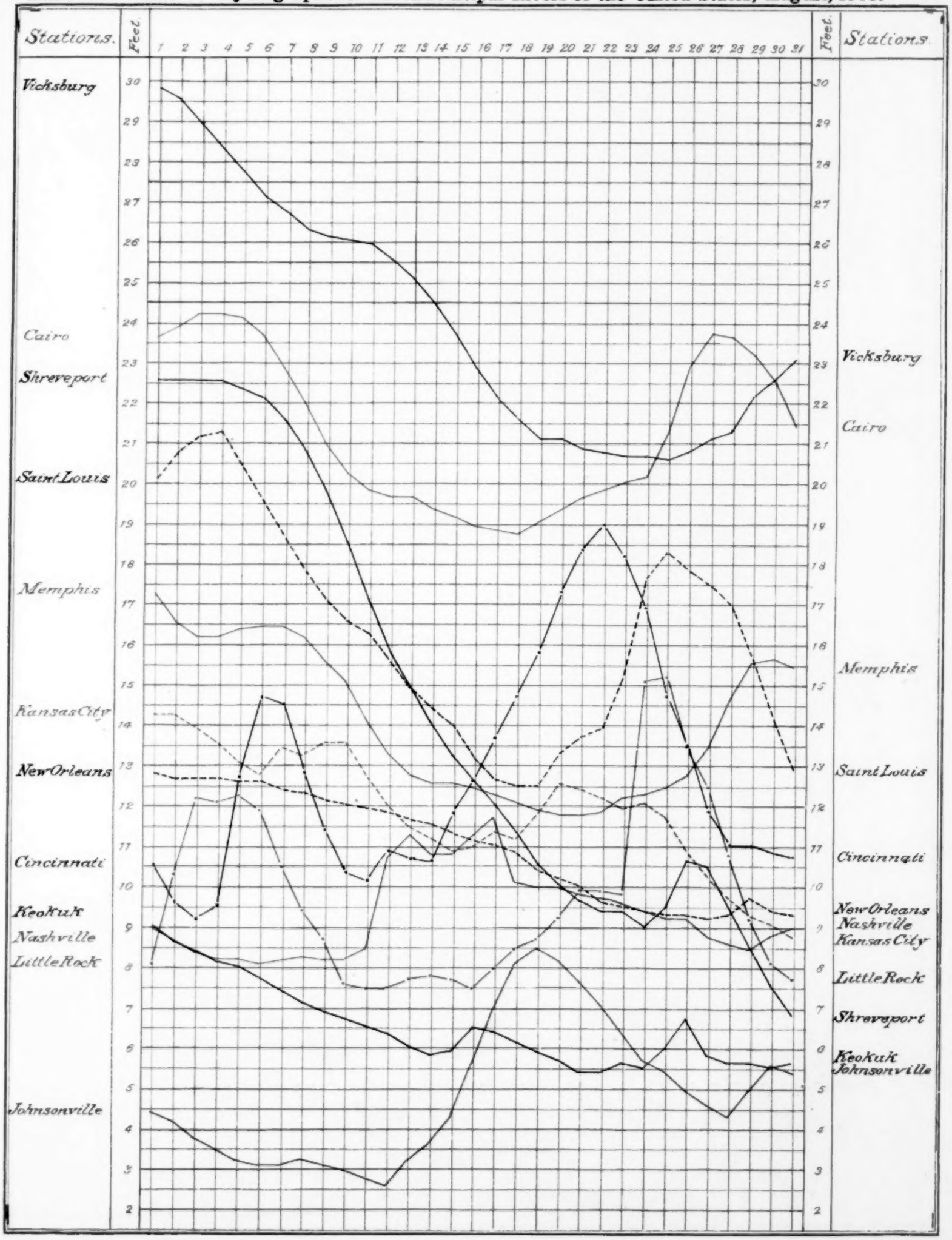
Stations.
Feet.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Vicksburg
Cairo
Shreveport
Saint Louis
Memphis
Kansas City
New Orleans
Cincinnati
Keokuk
Nashville
Little Rock
Johnsonville
30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2

Chart VI. Isobars and Isotherms at 10,000 feet, August, 1905.

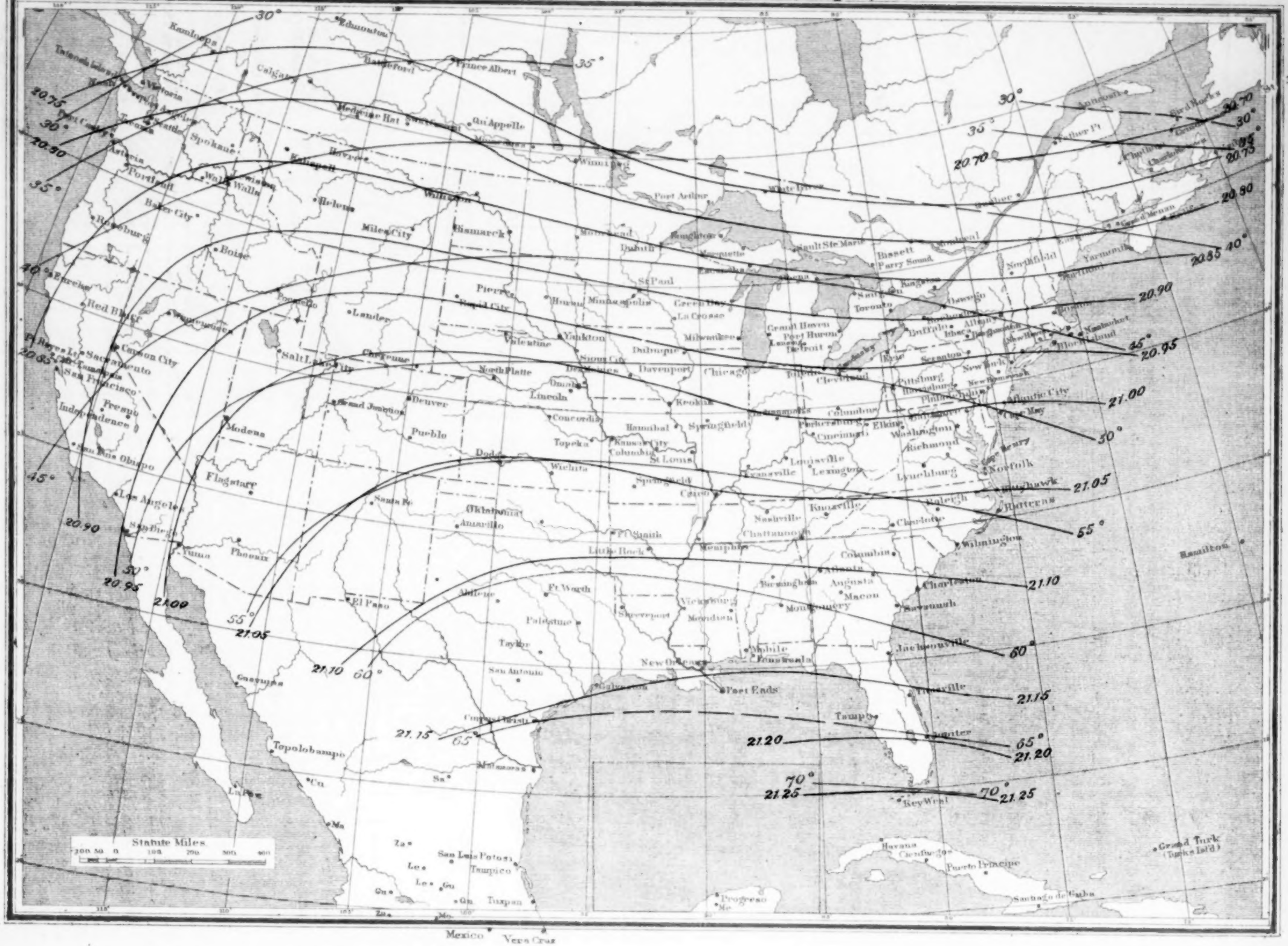

Chart VII. Isobars and Isotherms at 3500 feet, August, 1905.

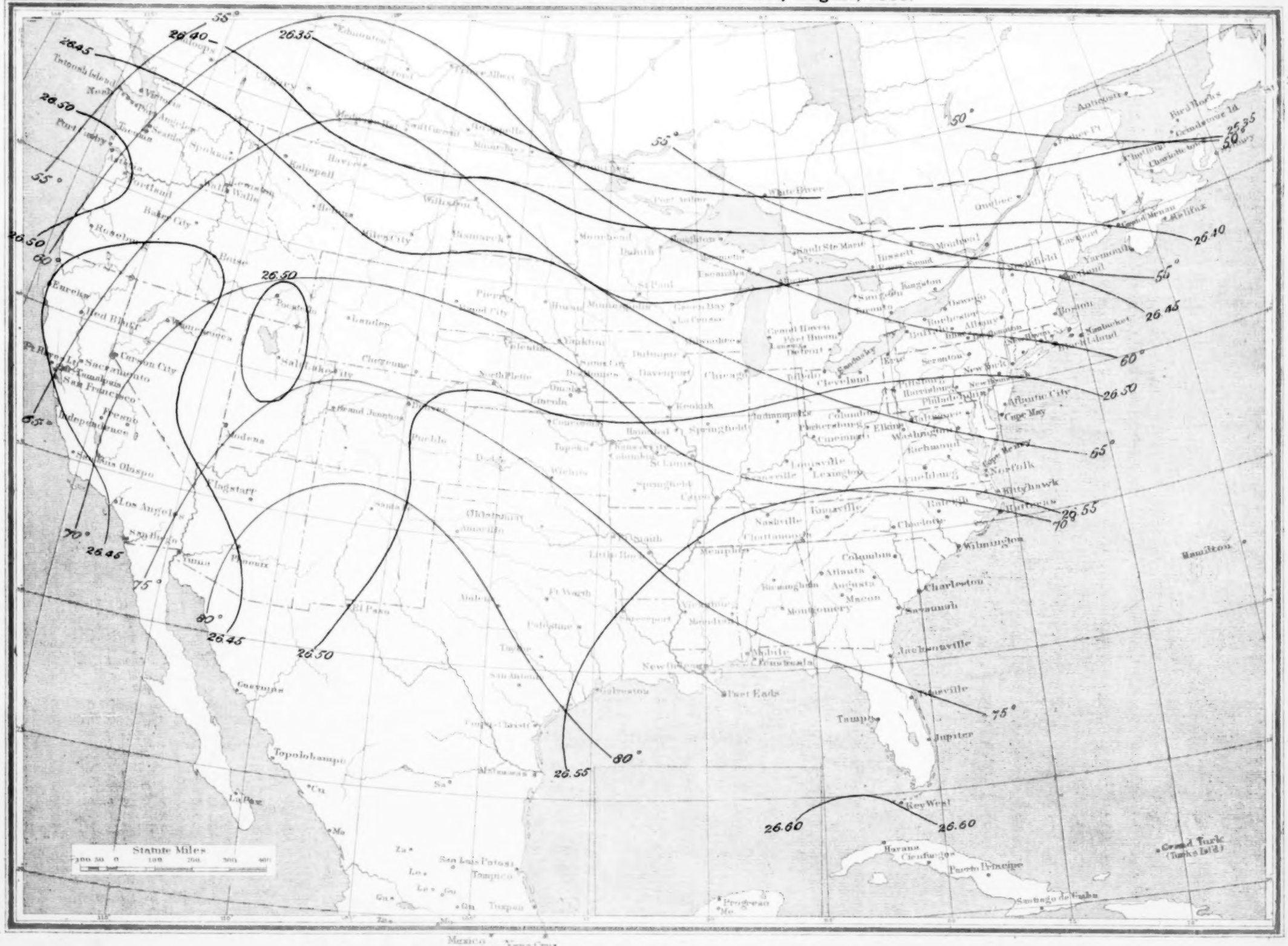

Chart VIII. Isobars and Isotherms at Sea Level; Surface Wind Resultants, August, 1905.

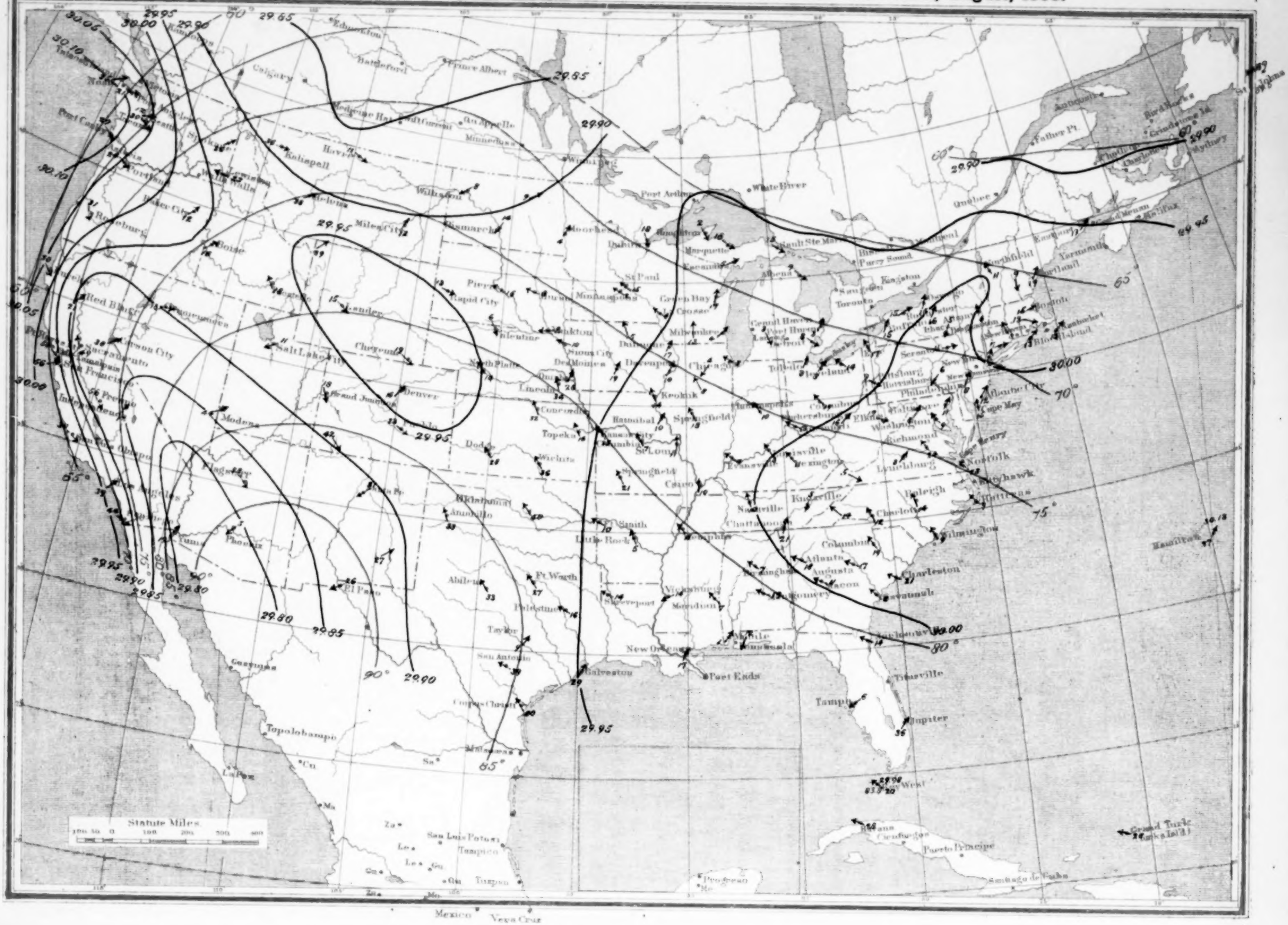

Chart IX. Sea-Level Isobars; Surface Temperatures, and Wind Resultants, August, 1905.
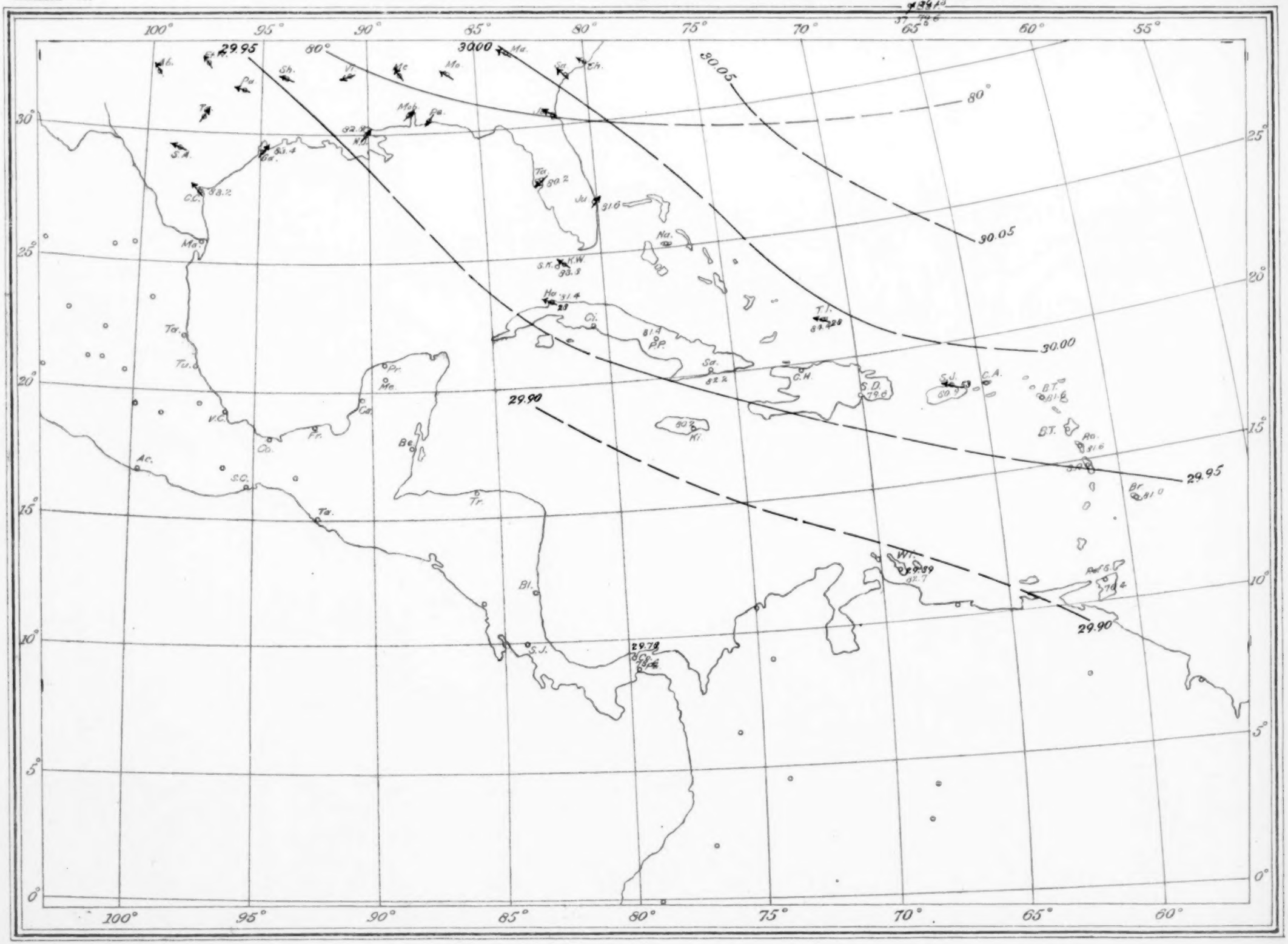
Chart IX. Sea-Level Isobars; Surface Temperatures and Wind Resultants, August, 1905.